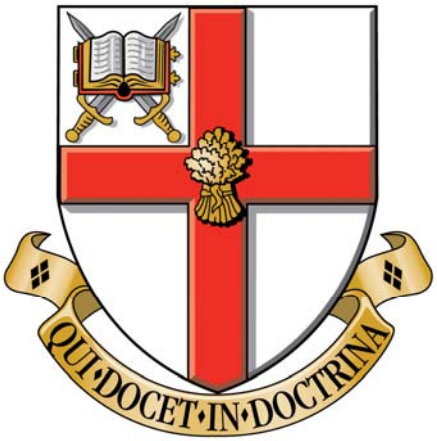

University of Chester

Ethical thinking in a disciplinary context: the ethical development of undergraduates and expectations of tutors in the arts, social and pure sciences

Dissertation submitted in accordance with the requirements of the University of Chester for the degree of Master of Arts

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Abstract

Barnett (2000) argues that universities need to prepare students for 'supercomplexity', where "the very frameworks by which we orientate ourselves to the world are themselves contested" (p. 257). Learning to think through ethical issues develops critical thinking skills for dealing with supercomplexity, since the frameworks the students use to consider ethical issues are contested and likely to change. Yet, Boyd *et al.* (2008) question whether universities actually produce graduates who are prepared "for practical and ethical engagement with their scholarly, professional and personal worlds" (p. 38). Moreover, we might expect differences in ethical thinking between disciplines given that the nature of ethical issues studied varies by discipline.

The overall aim of this research was to explore the development of undergraduates' ethical thinking during their programmes and to compare how it aligns with the expectations of their tutors and to discuss the implications for teaching and learning ethics in higher education. To address this aim the research objectives were to assess whether the ethical development of undergraduate students varies by discipline, gender and year; to analyse how the nature of ethical thinking expected by tutors varies between disciplines and evaluate the extent to which this aligns with the students' ethical development; and to discuss the implications for enhancing the teaching and learning of ethics. Most emphasis is placed on the first objective. To address these objectives, a questionnaire exploring students' ethical understandings and level of ethical development, was given to students in all three undergraduate years of the English (art), Geography (social science) and Animal Behaviour and Welfare (pure science) programmes at an English University. In total 335 students responded. Interviews were then conducted with tutors teaching on the three programmes discussing the nature of ethics within their disciplines, how ethics was taught and what ethical thinking skills they wanted their students to develop.

The key findings are that: 1) There are no significant differences between disciplines in terms of student ethical development. 2) There is some evidence of differences between years, but there was not clear evidence of progression over the three years of the undergraduate programme. 3) Male students demonstrate less ethical development than their female counterparts. 4) Tutors across all three disciplines have similar expectations in terms of the nature of ethical thinking desired. 5) Most of the students exhibit lower levels of ethical development than their tutors expected. It is suggested the skill of 'ethical thinking' should be included in programme outcomes and that teaching and learning strategies which cast students in the role of active, social and creative learners offer the best potential to enhance student ethical thinking abilities.

Declaration

This work is original and has not been previously submitted in support of a Degree, qualification or other course.

Signed ……

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Chapter 1

Introduction: The importance of ethics

> "Educators need to give greater attention to the teaching of ... ethics as part of our contribution to the education of responsible citizens." (Hay & Foley 1998: 169)

As competition within the education market has increased, universities have progressively attempted to define the distinctive characteristics of their graduates (Barrie 2004; 2006; 2007). Barrie (2004) has identified 'Ethical, Social and Professional Understanding' as one of five key graduate attributes. This attribute means that "graduates of the university will hold personal values and beliefs consistent with their role as responsible members of local, national, international and professional communities" (Barrie 2004: 270). This graduate attribute relates to the need to prepare students for 'supercomplexity', where "the very frameworks by which we orientate ourselves to the world are themselves contested" (Barnett 2000: 257). As students prepare for careers in the 21st Century they require global competences to understand the complex world in which they live (Bartell 2003). Healey *et al*. (2011) argue that learning to think through ethical issues develops critical thinking skills for dealing with supercomplexity. Ethical issues are an example of supercomplexity, as the frameworks the students use to consider ethical issues are both contested and likely to change. In increasingly dynamic professional and social lives, graduates need these skills to enable them to negotiate an uncertain world. Yet, Boyd *et al.* (2008: 38) question whether graduates are leaving university prepared "for practical and ethical engagement with their scholarly, professional and personal worlds."

This project came about in response to several experiences in which many of the students I teach demonstrated a lack of consideration of ethics within their studies. One such incident occurred when supervising a physical geography field trip. The students were asked to analyse water quality by indexing the number of different animal species they had collected in their sample. After they had noted the species in their sample several students did not think twice about returning the creatures to the water by tipping the trays upside down. When questioned about their actions some of the students recognised how their actions were inappropriate as the sudden upturning of the tray disturbs the organisms more than immersing the tray in water to allow them to leave the tray on their own. The students did not appear to reflect or think critically about how they would deal with situations similar to this in the future. Experiences such as this led me, with two colleagues, to propose a Learning and Teaching Institute (LTI) project in the Department of Geography and Development Studies (2010-11) which explored the ethical development of students in the department in different years and how the teaching of ethics, particularly in the second year, might be enhanced (Healey *et al*. 2011). This project led me to contemplate the extent to which the findings for geography related to other disciplines.

Understanding and learning about ethics and ethical issues is a skill that develops throughout an individual's life (Knapper & Cropley 2000). What happens within an educational environment is only part of the ethical learning that individuals experience (Kuh 1994). Despite this, higher education has an important role to play

in enabling students to recognise and understand ethical issues (Beck & Murphy 1994; Cortese 2003).

Within higher education the nature of the ethical issues studied by graduates varies between disciplines (Lane & Schaupp 1989; Rooy & Pollard 2002). For example, the ethical issues pure scientists face when testing on human subjects or undertaking animal experiments are of a different nature from those dealt with by social scientists when interviewing or observing people, or those explored in literature when deciding whether a character made the appropriate ethical choice. However, in terms of critical thinking, many ethical issues are multidisciplinary in nature, for example assisted suicide may be studied from many different disciplinary perspectives, yet the ways in which students might approach and think about such a topic may differ between disciplines. For example, science students may analyse the issue from the perspective of the medical issues of the individual body, whereas social scientists may consider the implications of assisted suicide for broader society.

For disciplines which involve primary research with animals or people, for many students their main contact with ethics relates primarily to the ethics of undertaking research (Boyd *et al.* 2008). Students are carefully guided through the process of seeking ethical approval for projects, especially students on accredited courses which have prescribed ethical standards (e.g. British Psychological Society accredited courses). Going through ethical clearance procedures has in many cases become relatively mechanistic, after which students may give ethics little further

consideration. However, in terms of a graduate attribute, ethics is more concerned with developing individuals to have the broader skill of *thinking* ethically in all parts of their lives, not just in research.

This research was conducted in an English University. The institution became a university in 2005 with an emphasis on teaching influenced by research. In its mission statement, the University identifies four key aspects of the education students receive at the institution:

- the pursuit of learning for its own sake
- the development of skills relevant for the needs of a healthy society
- the encouragement of students' character and values
- the importance of community in the learning enterprise

Additionally, the University's Learning and Teaching Strategy refers to the development of curricula that 'encourage reflective engagement with community and society' (University [in England] 2010: no page). Engaging students with ethical thinking supports the development of the character and values of graduates who have the skills to contribute to a healthy society.

As already noted this project builds upon a previous study by the author (Healey *et al.* 2011). In this project all students studying in the Department of Geography and Development Studies were asked to complete a questionnaire about their ethical development. This covered four programmes: Single Honours Geography, Combined Honours Geography, Combined Honours Natural Hazard Management and Combined Honours International Development Studies. In total 198 questionnaires were completed across all three years. Alongside this, interviews were conducted with thirteen tutors about their views on the importance of ethics

and what ethical awareness and skills they expected students to have by the time they graduate. The current study extracted the data from the earlier project for those students identified as studying one of the social science programmes in the department. By asking the same questions in an arts discipline and a pure science discipline this research was able to test the hypothesis that the ethical development of students varies by discipline.

The overall aim of this research was to explore the development of undergraduates' ethical thinking during their programmes and to compare how it aligns with the expectations of their tutors and to discuss the implications for teaching and learning ethics in higher education. This project has five main objectives:

1. To analyse the ethical development of students in three academic programmes in the arts, social and pure sciences.
2. To investigate the extent to which there is progression in the ethical development of students in different years across the three academic programmes.
3. To examine the ethical development of students' ethical thinking by gender across the three academic programmes.
4. To analyse how the nature of ethical thinking expected by tutors varies between disciplines and evaluate the extent to which this aligns with the students' ethical development.
5. To discuss the implications of the findings for enhancing the teaching and learning of ethics.

Most emphasis is placed on the first three objectives. This contributes to the research field in four main ways: 1) by comparing student ethical development between disciplines; 2) by comparing ethical development within disciplines by gender and year; 3) by replicating Clarkeburn *et al.*'s study (2003) in a different university and with different disciplines; 4) by assessing the extent to which student ethical development aligns with tutor expectations.

The following chapter reviews the literature on teaching ethics in higher education and defines what is meant by ethical thinking and meta-ethical development, before exploring the differences in ethical development between disciplines, year of study and gender. Chapter 3 explains the mixed-method approach adopted to explore ethical thinking and ethical development at the case study university. The analysis is then split between two chapters. Chapter 4 discusses student ethical development by discipline, year and gender, whilst Chapter 5 discusses tutor expectations about ethical thinking within the three disciplines in relation to student ethical development. Chapter 6 concludes the dissertation by reflecting upon the findings and discussing their implications for teaching ethics in higher education.

Chapter 2

Ethical thinking: discipline, year and gender variations

2.1 Defining ethical thinking and meta-ethical development

Ethics is a commonly-used label concerning a complex set of concepts and behaviours (Israel & Hay 2006). Ethics are distinct from morals which are concerned with the individual's personal character, whereas ethics focuses upon the broader social system in which morals are applied. Hence a sophisticated understanding of ethics recognises not just an individual's morals but how these are a part of the broader social system, influencing people's behaviour, and how people have different morals and ethical perspectives.

This project is interested in how 'ethical reality' is constructed by students. It adopts Clarkeburn *et al*.'s (2003) concept of 'meta-ethical development' which describes how students construct ethical realities, for example how students interpret the nature of ethical properties, attitudes and judgements. This notion is complemented by the concept of 'ethical thinking'. How students construct ethical reality influences their ability to think ethically. For the purposes of this research 'ethical thinking' encompasses two elements (Clarkeburn *et al*. 2002):

1. ***Ethical sensitivity***: an ability to perceive the ethical implications of a situation. Without the initial recognition of moral facts alongside scientific or 'hard' facts it is not possible to make moral decisions. Ethical sensitivity is also about an ability to understand the moral networks and implications of moral actions.

2. ***Moral reasoning***: an ability to engage in sound moral reasoning and use practical problem solving strategies. To make a judgement about which course of action is morally right (or fair, just, morally good or adequate) and thus label one possible line of action as what a person ought (morally) to do in that situation. Moral reasoning is also called 'moral cognitive skills'.

In order to discuss ethical issues, students require decision making skills, skills to understand and recognise moral issues, and skills to consider and decide upon solutions to moral problems (Clarkeburn *et al*. 2002). These elements of ethical thinking are contextualised within the broader skill of critical thinking:

> "Ethical learning is impossible without the development of critical reasoning (Kant, 2003) and, at the same time, critical reasoning is reinforced by the aspiration for justice and the independence sought by ethical learning" (Boni & Lozano 2007: 825).

Meta-ethical development therefore occurs through the improvement of critical thinking skills in relation to ethical issues. Ethical thinking is a particular type of critical thinking. Wolf *et al.* (2010) argues that critical thinking skills can "give students the tools to understand what they are learning" (p. 43). This ability relates to analytical, interpretation, inference, explanation, and evaluation skills (Facione, 2000). Ethical thinking requires these skills, enabling students to monitor and, where appropriate, correct their own moral reasoning; meaning that critical ethical thinking is about "judging in a reflective way what to do or what to believe" (Facione, 2000: 61). Students who have limited meta-ethical development consider reality to be certain, and believe in absolute answers (Clarkeburn *et al*. 2003). Learning to think ethically, to critically reflect on ethical issues, offers the opportunity for students to develop their understanding of ethical reality, recognising the complexities and uncertainties within life.

2.2 Ethical thinking in Higher Education

Over the last decade public trust, in business and more recently in politicians, has eroded (Gao *et al*. 2008; Ruhe & Lee 2008; Carrell 2009). It is increasingly

recognised that ethically and socially responsible behaviour plays a crucial role in good business practice (Nicholson & DeMoss 2009) and that "moral meaning and agency are fundamental to the definition of professions" (Robinson 2005: 2). Hence, graduate careers require more than just professional competence; they need to include a moral dimension (Boni & Lozano 2007).

Ethical thinking is a part of professional responsibility (Solbrekke & Karseth 2006). In the wake of policy led attempts to 'professionalise' aspects of academic practice (for example, Higher Education Academy 2006) there has been a renewed interest in the values that define academic life (Macfarlane & Cheug 2008). Some have gone as far as to ask whether or not society's expectations of higher education should be codified, and does higher education need a Hippocratic Oath (Watson 2007). The Association of Masters of Business Administration (Association of MBAs) has even introduced an MBA oath which has been pledged by 7,142 students from business schools across the world (Matthews 2012). Higher Education institutions should be leaders in the development of the cultures and the societies in which they are situated (Walesh 2012). It is within the environment of universities where students may first critically discuss the realities of citizenship and test its moral boundaries (Bruhn 2008), exploring the nature of social responsibility (Vujakovic & Bullard 2001) and developing the skills which optimistically will contribute towards transforming society for the better (Wellens *et al.* 2006).

Hargreaves (2008) argues that higher education in the UK aims to develop the intelligence and critical thinking skills of undergraduates. Ethical thinking is one

element of this (Hay & Foley 1998; Smith 1995). It is important to recognise that students are already ethically developed to varying degrees, yet higher education should ensure that students graduate with these skills. However, Escámez *et al.* (2008) found that current ethical teaching "often left students unarmed to cope with the frequent conflicts between ends, responsibilities, rights and duties that are bound to occur in their professional careers" (p. 43). The experiences students are having in Higher Education do not always prepare them for the potential moral questions they need to respond to in their post-graduation employment. Further knowledge as to factors which influence the nature of students' meta-ethical development offers opportunities to address these shortfalls.

The role of higher education should be to develop an ethics education which emphasises the significance of ethical consciousness in autonomous individuals (Hay 1998) rather than one structured around a set of 'rules' for moral behaviour (Hay & Foley 1998; Clarkeburn *et al.* 2002). This form of teaching offers individuals support to become ethically accountable for their own choices and actions whilst situating them within a supportive ethical community. The skill to think ethically is one of the most important "generic skills that future graduates should have" (Escámez *et al.* 2008: 50). In developing skills which allow them to handle the moral issues associated with the real world students are also better prepared for employment (Hay & Foley 1998). However, the extent to which ethics is seen as important in the discipline may vary.

2.3 Arts, social and pure science discipline comparison

Society's present problems are global and multidisciplinary in nature (Boni & Lozano 2007). Issues such as pollution, human rights, the fight against poverty, world security and so on, involve everybody and require multi and inter disciplinary approaches (Boni & Lozano 2007). Within higher education there are also areas of academic concern which cross disciplines, for example academic dishonesty, plagiarism, collusion and cheating (Ellery 2008; Colnerud & Rosander 2009). Yet, previous work has found significant differences between disciplines in terms of ethical beliefs (Lane & Schaupp 1989). This project considers ethics across three programmes: English (English literature), Geography (Human Geography, International Development Studies, and Natural Hazard Management) and Biosciences (Animal Behaviour). These discipline areas cover respectively the arts, social and pure sciences.

2.3.1 English: Arts

The discipline of English contains significant opportunities for exploration of ethical issues. For example, in English literature stories have the power to "train the moral imagination" (Hilder 2005: 42); in English language, research with participants raises ethical issues around working with participants in an ethically sensitive manner; and in creative writing issues of representation highlight ethical concerns. Yet, the English subject benchmark statement has no mention of ethics in relation to the discipline (QAA 2007a). However, for the sub-discipline of creative writing

and English language the importance of ethics is noted as a cognitive ability (NAWE 2008) and as an approach to research (HEA 2011).

2.3.2 Geography: Social science

Smith (1995) argues that moral issues are often marginalised within contemporary education, and that the discipline of geography is particularly well positioned to address this deficiency. Geography deals with many "inherently controversial subjects, from population control to environmental change" (Vujakovic & Bullard 2001: 276), providing a significant range of contemporary topics in which to situate ethical discussion. For example, 'sustainable development', a contested concept which underpins many contemporary geographical debates, is replete with ethical questions. The geography benchmark statement claims that:

> "Geography fosters a range of personal attributes relevant to the world beyond HE, which will promote geographers' ability to engage in lifelong learning, to consider ethics and values, and to contribute to the wider community" (QAA 2007b: 3).

The benchmark statement emphasises research and field based studies in relation to ethics, but also recognises "the moral and ethical issues involved in debates and enquiries" within the discipline (QAA 2007b: 5).

2.3.3 Animal Behaviour and Welfare: Pure science

Animal Behaviour and Welfare is categorised as a bioscience. Bioscientists face numerous ethical considerations whether it is choosing where to apply for funding, the research topic itself, or their interaction with animal (and sometimes human) research subjects (Clarkeburn *et al.* 2002). However, despite the recognition of the importance of ethics, the extent to which it is taught explicitly within the life

sciences varies significantly (Clarkeburn *et al.* 2002). This may be because members of staff are concerned that "ethics would demand too much time in a curriculum at a cost to the 'core' scientific subjects" (Clarkeburn *et al.* 2002: 66). Yet with science increasingly being taught within a social context (Reiss 1999), the Biosciences subject benchmark statement explicitly mentions ethics nine times in relation to critical assessment of intellectual arguments, professional codes of conduct, research methods, and a need to interpret decisions in relation to the broader social context (QAA 2007c).

2.4 Progression by year

Undergraduate higher education programmes aim to develop their students' analytical and critical thinking skills (Moon 2008). The curriculum is designed to support students at different stages in their development, and as such it would be expected that students' skills improve as they progress through their degrees. Perry's (1999) model of intellectual and ethical development assumes that students are at different stages of ethical development at different points in their university studies, with the expectation that the further they go through the academic system the greater their ethical engagement. This argument is supported by research with pre-service teacher education students, where the findings indicated moderate to significant changes in student moral judgement and reasoning (Reiman 2002). Clarkeburn *et al.* (2003) used Perry's (1999) scheme to categorise different students' ethical development (Table 2.1). Students are considered to be more ethically developed when they achieve commitment characteristics (Type C). However, research into changing ethical perceptions and understanding found

there to be no significant differences by year (Dellaportas 2002; Ludlum & Mascaloinov 2004). Ludlum & Mascaloinov (2004) suggest that this may relate to the thesis that education does not influence educational beliefs. Yet, continue by pointing out that the lack of significance in their study may relate to the small proportions of students in the later years of their degree who participated in the study (Ludlum & Mascaloinov 2004).

Table 2.1: Outline of the nine positions of ethical development proposed by Perry (1999)

Source: Clarkeburn *et al.* (2003: 446)

Although it might be expected that student's meta-ethical development might increase as they progress through their degrees, the relationship between skill development and ethical development may not be direct. Rather, greater experience of dealing with real life ethical issues as people progress through life

may have a greater impact upon an individual's engagement with the complexity and contingent nature of ethical issues.

2.5 Variation by gender

Numerous published studies, using a range of tools, have found that female students tend to be more ethical than their male counterparts (Barnett & Brown 1994; Donoho *et al.* 2012; Persons 2009; Tse & Au 1997; Whipple & Swords 1992). It is argued that women may be predisposed to support ethical positions more strongly through their conditioning as caregivers (Ludlum & Mascaloinov 2004). However, further research indicates some anomalies and nuances in this general trend. For example, some studies have found no significant difference between men and women when investigating their perceptions about ethics (Kelger 2011). These differences may relate to the challenges of measuring what it means to be ethical. Alongside this, Phau & Kea (2007) found that males were generally more ethical than females in research in Singapore, Hong Kong and Australia. As many of the studies that have found females to be more ethical than men were conducted in North America, then these differences might relate to cultural upbringing and background. However, even in the US where women have been found to be slightly more ethical than men, it is acknowledged that these differences were only very slight and in the same direction for both genders (Ludlum & Mascaloinov's 2004). Furthermore, Peterson *et al.* (2001) found that the ethical views of men tended to become more in line with women's as they aged.

To summarise, although the majority of research has found female students, on a variety of different measurements, to be more ethical than their male counterparts, there are definitive exceptions. The range of ways in which ethicality is measured means that it is not possible at this point to conclude that there is a gender difference.

2.6 Implications

This project emerged from a concern over a lack of ethical awareness and consideration by many students known to the author. This chapter has considered the factors that might influence student ethical development, demonstrating the potential for variety in ethical development by discipline, year and gender. In order to explore the similarities and differences in the requirements of ethical thinking within these disciplines it is important firstly to recognise the ethical knowledge students from different disciplines already have. An awareness of students' current ethical development provides a basis from which to interpret the ethical skill development needs in a discipline, by year and gender. Secondly, it is necessary to understand the current level of meta-ethical development in different student cohorts. Without this it is not possible to design teaching to support ethical progression (Clarkeburn *et al.* 2003). Thirdly, it is important to recognise how student's development may vary by gender. A greater understanding of variability, or lack of variability, of ethical development by gender offers the opportunity to consider designing curricula to support the range of different levels of ethical development within a cohort. Greater knowledge as to the factors that influence, or do not influence, the ethical development of students offers opportunities to

enhance the teaching and learning of ethics in higher education. The next chapter discusses the methodology of the research and explaining how the aims of the research are addressed.

Chapter 3

Methodology: A comparative case study approach

3.1 Rationale and approach

This research takes the position that "the social world can only be understood from the standpoint of the individuals who are part of the on-going action being investigated" (Cohen *et al.* 2000: 19). This follows the belief that reality is the result of individual cognition. In order to analyse students' ethical development it is necessary for them to 'voice' their views as to the nature of ethics. This research adopts a comparative case study approach by comparing selected programmes from three contrasting departments: English, Geography and Animal Behaviour and Welfare. Case studies are generally the preferred approach when "'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (Yin 2002: 1). This research is asking 'how' much understanding students have of ethics within their different disciplines, making a case study approach appropriate. Case study research "aims to explore and depict a setting with a view to advancing understanding of it" (Cousin 2005: 421). Case study research originates from cultural anthropology in which the research site is considered as the 'field' and the researcher, often as a participant observer, gathers and analyses data from this location over a period of time (Cousin 2009). Following Bassey's (1999) caution, this case study aspires to make 'fuzzy generalisations' which assert that everything

is a matter of degree, and nothing is certain. Therefore the generalisations will be predicted in terms of 'may' rather than 'will' (Cousin 2005; 2009).

Before discussing the method in detail it is important to acknowledge the author's positionality in relation to the research. Who the researcher is and their relationship with the research has both positive and negative influences on how the research is constructed and conducted, and how the findings are interpreted. There are three main parts of my identity which are important here: 1) my position as a lecturer, 2) my own moral framework, and 3) my motivation for undertaking the study. My positionality as a lecturer at the case study university provided me with access to gatekeepers in different departments and potentially put me in a position of power in relation to the students who participated in the research. As a colleague at the same institution some of the gatekeepers in other departments, may have been more willing to enable access to their students, than they would have been to someone from a different institution or an undergraduate student requesting access. As a lecturer, and therefore a perceived authority figure, the students, even though not taught by me, may have felt obliged to complete the questionnaire. Secondly, my own moral framework influences my interpretation of ethical development. For example, this has influenced how I found Perry's classifications and the Meta-Ethical Questionnaire an acceptable interpretation, and tool, respectively for understanding ethical development. Finally, the motivation to research this topic in this particular way influences the study. This dissertation was conducted as part of my career development, with the desire to develop my quantitative research skills. The choice of the topic, as argued in the

introduction, was motivated with the desire to enhance student understanding of ethics in higher education. By acknowledging the influence of my positionality it is possible to recognise how the potential positive and negative impacts on the research balance out.

The remainder of this chapter discusses the methods used to address the five main research questions:

1. What are the differences and similarities in the ethical development of students in three academic programmes in the arts, social and pure sciences?
2. What is the extent to which there is progression in the ethical development of students in different years across the three academic programmes?
3. Is there any difference in the ethical development of students by gender across the three academic programmes?
4. What are the differences and similarities in the nature of the ethical thinking expected by tutors between the three academic programmes and to what extent does this align with the students' ethical development?
5. What are the implications of the findings for enhancing the teaching and learning of ethics?

3.2 Data collection, recruitment and analysis

To address the research questions, a mixture of qualitative and quantitative methods were used to consider the "multiplicity of meanings, representations and practices" (Smith 2001: 24) of ethics in higher education. This includes two methods of data collection: 1) an anonymous questionnaire with students; and 2) semi-structured interviews with four tutors (in addition to the thirteen already undertaken in Geography). In order to maintain a common institutional context, this research took place in different departments at the same institution.

3.2.1 Student questionnaire

The first three research questions were addressed through the use of a questionnaire. There were three reasons for choosing a self-completion questionnaire to collect both qualitative and quantitative information. Firstly, the research aimed to compare findings with the study by Clarkeburn *et al.* (2003). This study had used a questionnaire to gather data to provide students with an 'ethical score' to identify their level of meta-ethical development. To ensure consistency the same tool was used for this research. Secondly, alongside qualitative differences between programmes, a questionnaire offers the opportunity to look for statistically significant trends and differences. A questionnaire enables responses to be gathered from large numbers relatively quickly, and cost efficiently (De Vaus 1991; Fink 1995). Thirdly, when discussing a topic such as ethics, different students' development varies in relation to their context and belief systems. Consequently a qualitative method of data collection would enable participants to express their views in their own words. An anonymous open-ended questionnaire is believed to be an appropriate tool for enabling students to explain in their own words what the topic means to them. A one-to-one interview, or focus group, on the topic of ethics, may intimidate students and lead them to feel uncomfortable (Miller 1999). However, a questionnaire is likely to produce less in-depth responses, and prevent the researcher from probing responses further.

The questionnaire explored student meta-ethical development by incorporating Clarkeburn *et al.*'s (2003) Meta-ethical Questionnaire (MEQ) (see Appendix 1 for full questionnaire). The MEQ assessed how students constructed ethical reality,

exploring how they interpret the nature of ethical properties, attitudes and judgements. As argued in Chapter 2 meta-ethical development occurs through the improvement of ethical thinking skills. The first section of the questionnaire offered students the opportunity to express their understanding of ethics through three open-ended questions. These questions enabled the students to explain their interpretation of ethics in their own words by explaining the term, providing an example from their past education, and identifying a time when they have put ethics into action in some way. The second section of the questionnaire was quantitative asking students to choose their responses along a scale: the MEQ. This questionnaire was rigorously developed and tested with a cohort of 478 Life Studies students at the University of Glasgow and the findings published in *Studies in Higher Education*.

After contacting programme leaders in the Departments of English and Biological Sciences the researcher was given permission to work with their students. During the first two weeks of the academic year all students, at each level, studying on the programmes in English and Animal Behaviour and Welfare were asked to complete the questionnaire already used in the Department of Geography and Development Studies. In order to encourage a reasonable response rate, the questionnaires were given out in teaching sessions and the tutors made time for the questionnaires to be completed then and there (see Table 3.1 for ethical considerations). So that all students had the opportunity to complete the questionnaire an electronic version was also made available (though none were received electronically).

Table 3.1: Questionnaire ethical considerations

Ethical issue (Source: Hay 2003)	**Questionnaire**
Access	• Permission was sought from programme leaders in each of the departments to work with their students.
Consent	• Students were invited to take part in the questionnaire at the beginning or end of a teaching session they had attended. • It was made clear in a spoken introduction that participation was voluntary. • A full Participant Information Sheet (PIS) was attached to the questionnaire (Appendix 1). In order to minimise disruption to the teaching session this was presented at the same time as the questionnaire.
Confidentiality	• All questionnaire responses were anonymous. • The information collected could not be traced back to an individual student.
Harm	• The PIS made clear that there would be no adverse effects or benefits to the students whether they chose to take part in the study or not. • The power relations of being a lecturer were reduced by working with students who I do not teach in English and Animal Behaviour and Welfare. In the previous year when data was collected with Geography students, a research assistant who did not teach the students organised the collection of data from the students.
Cultural awareness	• The topic of ethics is sensitive with moral attitudes and perspectives being variable between different people and cultures. The questionnaire was phrased in such a way that students could identify how they perceive ethics.
Dissemination	• An electronic version of this dissertation will be uploaded to my staff website so that participants may read the findings. • An email of the abstract will be sent around the programmes where the questionnaires were collected with a link to the electronic final report.

The questionnaire data was analysed in two main ways: 1) within the discipline for relationships between characteristics of the participants (year and gender) and ethical development; 2) between the disciplines, year group and genders for ethical development. This analysis involves two main aspects: firstly, an interpretation of the different ways in which students understood ethics. The analysis of these open-ended responses took a grounded approach. The responses were all read to identify key categories. The categories and the differences between them were then defined. This was followed by coding the responses in relation to each of the categories. If the response related to more than one category then they were

coded as both and identified in the 'multiple' response category. The responses which demonstrated 'multiple' elements were generally more sophisticated responses. Given the length of responses, a content analysis was not appropriate. Instead, to get a sense of the nature of responses and how these varied by discipline, year and gender, the different categories were totalled in order to explore patterns of similarity or different themes between groups. It was not possible to test for statistical differences on these findings as there were too many distinct categories that could not be collapsed together to meet the assumptions of Chi-square.

Secondly, the MEQ responses were analysed by the students overall 'ethical score', by element and by question. Following Clarkeburn *et al.* (2003) each student received an ethical score. The score was calculated using the following weightings: A=1, Ab=4, B=9, Cb=16, C=25 (Table 3.2). The response to each question was totalled and then divided by the number of questions (10 in total)[1]. The resulting figure represented the 'type' of ethical knowledge each student had at that point in time (Type A = 0–8.9, Type B = 9-15.9, Type C = 16-25). The findings were analysed in Excel and SPSS to look for visual and statistical differences. The parametric test of Analysis of Variance (ANOVA) was chosen to test for significance between discipline, year and gender and ethical scores, as it is a more powerful test, and the data approximates to normal distribution for the ethical scores of the MEQ (Mean 16.2; Median 16.2; Skewness -0.340; Kurtosis -0.028). Pearson's Chi-Squared test

[1] The data was also analysed using a single scale of 1, 2, 3, 4 & 5 for each answer. As with Clarkeburn *et al*.'s (2003) study the significance of the results was not altered by modifying the values given to the different points on the meta-ethical scale in this way. The data reported uses the weighted scale in order to be comparable with Clarkeburn *et al.* (2003).

was chosen to test for significance between types of meta-ethical development and discipline, year and gender as this was nominal/categorical data.

Table 3.2: Meta-ethical Questionnaire response options

	Definitely my opinion	More or less what I believe	Neither statement represents my view	More or less what I believe	Definitely my opinion	
Statement Type A	**A**	**Ab**	**B**	**Cb**	**C**	**Statement Type C**

3.2.2 Tutor interviews

The fourth research question was addressed through in-depth interviews and the questionnaire material. In-depth semi-structured interviews were employed with two tutors in English and Animal Behaviour. These were tutors of classes who had completed the questionnaires (alongside the data from the 13 interviews with Geography tutors from the previous project). These interviews focused upon the nature of ethical thinking expected by tutors. As student ethical development occurs through the improvement in the ability to think ethically, it is important to understand what tutors expected from their students, in order to interpret the level of development found in the questionnaire.

An in-depth interview is a "conversation with a purpose" (Dexter 1970: 136). Semi-structured interviews are considered the most effective way of collecting information on the nature of ethical thinking required in their discipline. This is because interviews enable "opinions, networks of relationships and ideas to be presented and qualified" (Hoggart *et al* 2002: 205). This is important as the level of

detail needed to analyse the nature of ethical thinking in different disciplines "is best communicated through detailed examples and rich narratives" (Hoggart *et al* 2002: 205). The advantage of interviews over questionnaires for the discipline tutors was that they are more conversational, and could be varied according to the interests, experiences and views of the interviewees (Valentine 2005). The interviews were semi-structured to encourage discursive dialogues, as Goudge (2003) found "this is the most effective way of exploring underlying attitudes" (p. 96). The interviewees were asked questions about their perceptions of the ethical thinking skills their students require upon graduation. Specifically the interviews related to three themes: understanding (what tutors thought their students should understand about ethics once they have completed a degree in their discipline); relevance (how relevant was or should ethics be to the undergraduate learning within their discipline); and process (how ethics is taught in the discipline). The interviews were recorded on a dictaphone with the permission of the respondents. A full transcription of each interview was produced.

Table 3.3: Interview ethical considerations

Ethical issue (Source: Hay 2003)	**Interviews**
Consent	• Tutors were invited to participate in an interview via email. Each of these tutors had already assisted the project by providing time in their class to hand out the questionnaire. • A Participant Information Sheet (PIS) was emailed to the tutor before the interview and they were given a paper copy at the beginning of the interview (Appendix 2). • Each interviewee was asked to complete an informed consent form to state that they understood the information on the PIS, understood that their participation was voluntary, and were willing for the interview to be recorded (Appendix 3).
Confidentiality	• Pseudonyms are used in this write up to protect the anonymity of the interviewees. • The full transcripts have not been included in the appendix as the detail of the work discussed would reveal the identity of the participant.

Harm	• The PIS made clear that there would be no adverse effects or benefits to the tutors whether they chose to take part in the study or not. • Through the course of the interviews, tutors could reveal information that could reflect negatively on them. If this occurred and the information was not directly relevant to the research then it was omitted from the transcription.
Cultural awareness	• The topic of ethics is sensitive with moral attitudes and perspectives being variable between different people and cultures. In the course of the interview it was made clear that I was interested in the participant's view of ethics within the discipline.
Dissemination	• An electronic version of this dissertation will be uploaded to my staff website so that participants may read the findings. • An email of the abstract will be sent to the tutors who participated in the interviews with a link to the full electronic final report.

Four in-depth interviews were conducted in addition to the interviews with Geography last year. Two of the interviews were with tutors from English and two from Animal Behaviour and Welfare. The Geography interviews covered all of the core tutors within the department. The interview data was analysed using NVivo, focusing upon the three themes of the interviews: 1) understanding – tutor expectations of their students understanding in relation to ethics; 2) relevance – how relevant tutors perceive ethics to be to their discipline and teaching; 3) process – how ethics was taught in the discipline. This helped to create a rigorous analysis of the data producing a strategic and systematic interpretation of what the tutors said.

The final research question was addressed by discussing the findings from both the interviews and the questionnaire in relation to existing literature on teaching challenging topics. The next chapter discusses student ethical development by discipline year and gender, followed by Chapter 5 which discusses tutor reflections on ethical thinking within different disciplines.

Chapter 4

Student ethical development by discipline, year and gender

This chapter focuses upon the analysis of the questionnaire data. It addresses the first three research questions:

1. What are the differences and similarities in the ethical development of students in three academic programmes in the arts, social and pure sciences?
2. What is the extent to which there is progression in the ethical development of students in different years across the three academic programmes?
3. Is there any difference in the ethical development of students by gender across the three academic programmes?

4.1. Characteristics of respondents

This analysis is based on 335 responses of first, second and third year undergraduates; 258 were from single honours students in English, Geography, Animal Behaviour, Animal Behaviour and Welfare, Biology and Zoo Management, 77 were from students who were taking one of the three subjects combined with another art, social science or science subject respectively (Table 4.1). Thirty-eight of the responses where from students combining with disciplines outside arts, social sciences or sciences, and as such were excluded.

The majority of the students who completed the questionnaire in English were studying single honours English (58 responses, 59%). The same was true for Geography with single honours students representing the majority of responses from the discipline area (52 responses, 60.47%). Within the Animal Behaviour

responses the majority were studying single honours Animal Behaviour and Welfare (86 responses, 56%), the second largest group were studying single honours Animal Behaviour (47 responses, 31%).

Table 4.1: Questionnaire responses by programme

English (Single Honours or combined with another art)	**98**	**Geography** (Single Honours or combined with another social science*)	**86**	**Animal Behaviour** (Single Honours or combined with another science)	**151**
• English (SH)	58	• Geography (SH)	52	• Animal Behaviour (SH)	47
• English and Creative Writing (CH)	15	• Geography and Sociology (CH)	1	• Animal Behaviour and Welfare (SH)	86
• English and Drama (CH)	10	• Geography and Business Studies (CH)	1	• Animal Behaviour module as part of Biology (SH)	11
• English and History (CH)	6	• Geography and Tourism (CH	1	• Animal Behaviour and Biology (CH)	3
• English and English Language (CH)	3	• Geography and Events Management (CH)	1	• Zoo Management (SH)	4
• English and Theology (CH)	3	• IDS and Geography (CH)	17		
• English and Fine Art (CH)	3	• NHM and Geography (CH)	8		
		• NHM and IDS** (CH)	4		
		• Geography and Spanish (CH)	1		
				Total responses	**335**

*Note: this group only includes students who identified human geography or geography as a whole as their interest. **Although students studying Natural Hazard Management and International Development Studies do not have Geography in their programme title, in many institutions these subject areas would be studied within a Geography programme.

For each subject area, a similar percentage of students responded from the different years (Table 4.2). Around 40% of the responses were from year 1 from each subject. The percentage of responses from years 2 and 3 were both around 30%.

Table 4.2: Responses by year

	Year 1		Year 2		Year 3		Total
	No.	%	No.	%	No.	%	
English	43	44	28	29	27	28	98
Geography	32	37	29	34	25	29	86
Animal Behaviour	61	40	38	25	52	34	151
Overall	136	41	95	28	104	31	**335**

Overall more women completed the questionnaire (77%) in comparison to men (23%) (Table 4.3). Whereas Geography had the highest proportion of men (42%) both English and Animal Behaviour had much lower proportions (both at 17%). These differences reflect the proportions of men and women studying the disciplines at the case study university (Animal Behaviour: M=18%, F=82%; English: M=24%, F=76%; Geography: M=56%, F=44%). This analysis begins by looking at the quantitative findings from the questionnaire before discussing the responses to the open-ended questions.

Table 4.3: Responses by gender

	Male		Female		Total
	No.	%	No.	%	
English	17	17	81	83	98
Geography	36	42	50	58	86
Animal Behaviour	25	17	126	83	151
Overall	78	23	257	77	**335**

4.2. Meta-ethical questionnaire

The following discusses the findings from the Clarkeburn *et al.* (2003) meta-ethical questionnaire (MEQ) across all three disciplines, and by year and between genders as a whole. The findings are then analysed by element by discipline, year and gender.

This section of the analysis focuses upon 295 responses. This smaller number of responses has been filtered for two reasons: 1) the MEQ section of the questionnaire was not completed in full (13 respondents); and 2) the response did not pass Clarkeburn *et al.*'s (2003) internal validity check (27 respondents) - where the two statements representing element V (purpose of ethical discussion) were essentially addressing the same point (statement pairs 8 and 9). Responses which had more than one step difference between the two statements were considered invalid. The breakdown of the responses is shown below in Tables 4.4 and 4.5 indicating a similar pattern of response as the whole group.

Table 4.4: MEQ usable responses by year

Subject	Year 1	%	Year 2	%	Year 3	%	Total
English	36	42	25	29	24	28	85
Geography	22	30	28	38	24	32	74
Animal Behaviour	52	38	34	25	50	37	136
Total	110	37	87	30	98	33	295

Table 4.5: MEQ usable responses by gender

Subject	Male	%	Female	%	Total
English	15	18	70	82	85
Geography	30	41	44	60	74
Animal Behaviour	22	16	114	84	136
Total	67	23	228	77	295

The MEQ asked participants to select a position between ten sets of contrasting paired statements (Appendix 1). There were 5 options for each set of paired statements enabling students to position themselves in the middle between the two statements if neither represented their view. According to Clarkeburn *et al.*

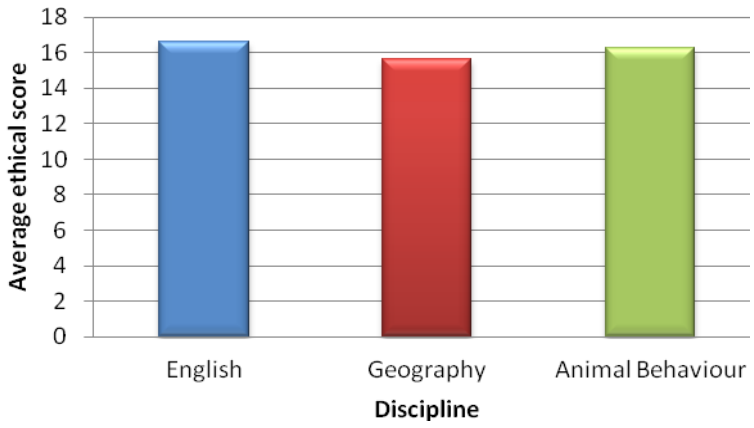
(2003) students who indicated that their beliefs were closer to the statements on the right hand side of the questionnaire were demonstrating greater understanding of the complex, uncertain, variable nature of ethical issues, and recognising that such issues are contingent and open to different perspectives. Furthermore the statements to the right suggest greater self-awareness and that the participant takes greater ownership of their decisions. The mean ethical score for all of the MEQ responses was 16.2 with a minimum score of 4.9 and a maximum score of 25. This is comparable with Clarkeburn *et al*.'s (2003) control group[2] who on scored a mean of 16.9.

4.2.1. Discipline analysis

The mean ethical score for each discipline indicates little difference between the different subject areas (Figure 4.1) with all falling in the narrow range with the highest mean score of 16.6 (English) and the lowest 15.6 (Geography). The Animal Behaviour students received a mean a score of 16.2. Addressing question one this suggests that there is little difference between the current ethical development of students in the three academic programmes.

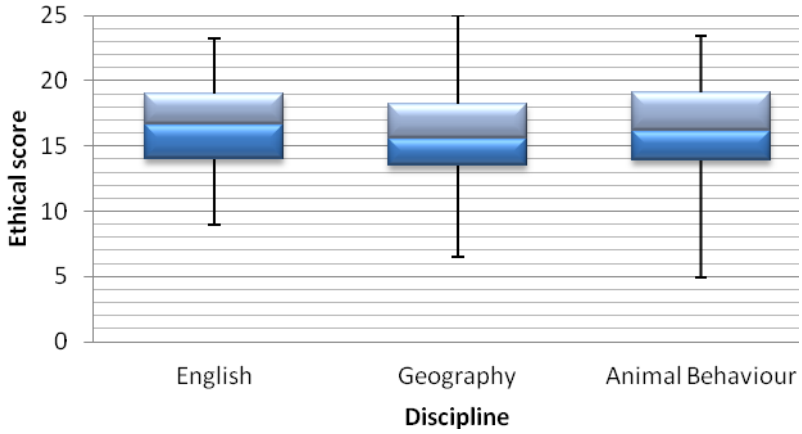
[2] The control group in Clarkeburn *et al*.'s (2003) study did not participate in the ethics programme.

Figure 4.1: Mean ethical score by discipline



The findings can be further examined to show the range of ethical scores within the different disciplines (Table 4.6 and Figure 4.2). The broadest range of ethical scores was within Animal Behaviour with a standard deviation from the mean of 3.8 and an inter-quartile range of 5.2. English had the narrowest range with a standard deviation of 3.1 and an interquartile range of 5.1. Although the range for Animal Behaviour is slightly larger, it is only a minor difference.

Figure 4.2: A 'box and whiskers' plot of the ethical scores by discipline



Key: Dark blue = 1st quartile range. Light blue = 3rd quartile range.

Table 4.6: Mean ethical score and range by discipline

	Mean Ethical Score	Standard Deviation	Median Ethical Score	Q1	Q3	Interquartile Range
English	16.6 (n=87)	3.1	16.6 (n=87)	14.0	19.0	5
Geography	15.6 (n=74)	3.6	15.55 (n=74)	13.5	18.2	4.8
Animal Behaviour	16.2 (n= 136)	3.8	16.2 (n=136)	13.9	19.1	5.2

An ANOVA test to compare the means found that there were no significant difference by discipline (F value 1.629, $p < 0.198$, df 2). The means from the discipline ethical scores may also be examined in line with Clarkeburn *et al.*'s (2003) use of Perry's (1999) scheme to categorise different students' ethical development based on the following thresholds: Type A = 0-8.9, Type B = 9-15.9, Type C = 16+ (Table 4.7; Figure 4.3).

Table 4.7: Summary of characteristics of different types of ethical development

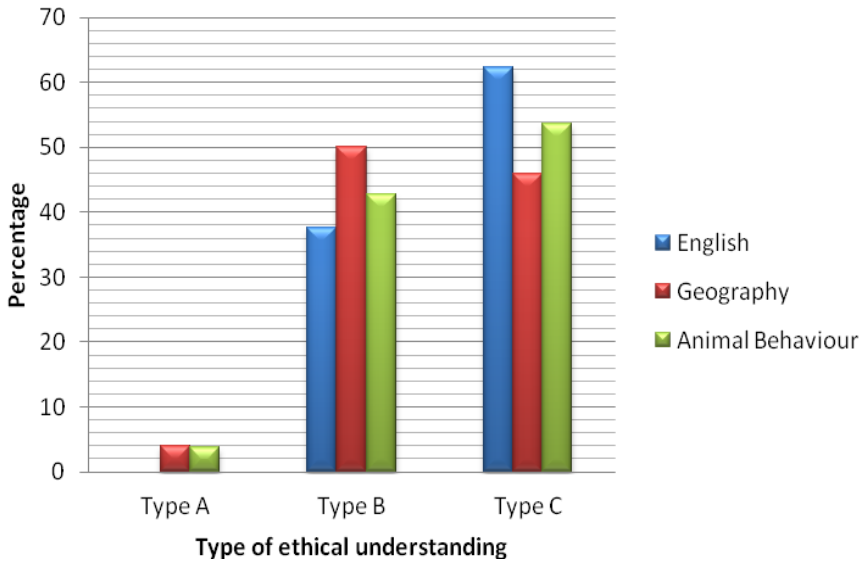
Type A	'Safety in dualism' – sees the world in dualistic terms with clear rights and wrongs, they view diversity as an unwarranted confusion.
Type B	'Distress in relativism' – accepted a world of multiplicity and relativism, because they believe that the tutors want them to accept such a world.
Type C	'Comfort in commitment' – makes commitments to moral values, taking responsibility for chosen values and how to fulfil them.

Source: Clarkeburn *et al.* (2003: 445-447)

Figure 4.3 clearly shows that for English (62.4%) and Animal Behaviour (53.7%) the majority of students can be classified as 'Type C'. This indicates that the majority of these students in all of the three disciplines are recognising the variability and contingent nature of ethical issues. However, a slightly higher proportion of Geography students could be classified as Type B (50.0%) rather than Type C (46.0%). According to Clarkeburn *et al.* (2003) these students continue to struggle with the complexity of multiple perspectives and understandings of different issues. Perry (1999) suggests that most students who have reached the stage of higher

education are making the transition from Type B to Type C (cited Clarkeburn *et al.* 2003). Type A students are "expected to be rare in the higher education population" (Clarkeburn *et al.* 2003: 447) given that a by the time a student reaches university education they are likely to have been taught to think critically to some degree about the subject material of the different disciplines. These findings support this with less than 5% of Geography and Animal Behaviour students, and no English students being classified as Type A. This suggests that these students are applying these critical thought processes in considering how they think about and manage ethical issues. A Pearson Chi-Square test indicates that there is no significant difference between the three different disciplines and the types of meta-ethical development the students have demonstrated (Chi-Square value 4.322, $p < 0.115$, df 2). The overall MEQ analysis in relation to research question one demonstrates that there are no significant differences between the three disciplines.

Figure 4.3: Participant ethical scores by different types of ethical development and discipline



4.2.2. Year group analysis

As argued in the literature review, the extent to which students might progress in their ethical development as they go through their studies is questionable (Dellaportas 2002; Ludlum & Mascaloinov 2004; Perry 1999). This research has tested the assumption that students will be at different stages of ethical development at different points in their university studies using various different methods of analysis. These different methods of analysis have indicated some variation in the answer to research question two.

An analysis of the means for all three disciplines at each of the different years of the undergraduate programmes indicates a lack of difference between the years (Table 4.8 and Figure 4.4). Year 3 has the highest mean at 16.8; however this is only higher by 1.4 than the lowest score at year 2. Furthermore the overall findings lack a clear progression from first year to the third year of the undergraduate programme. Focusing upon question two, this suggests that there is relatively little, if any, progression in ethical development across the three years of a programme. This implies that development cannot be directly linked to how far along they are in their programme of study. However, this research was with different cohorts at the same point in time, the differences between these year groups therefore relates to cohort differences rather than a lack of progression for individuals. A longitudinal study with the same cohort would be needed to demonstrate individual development.

Figure 4.4: Overall year group differences

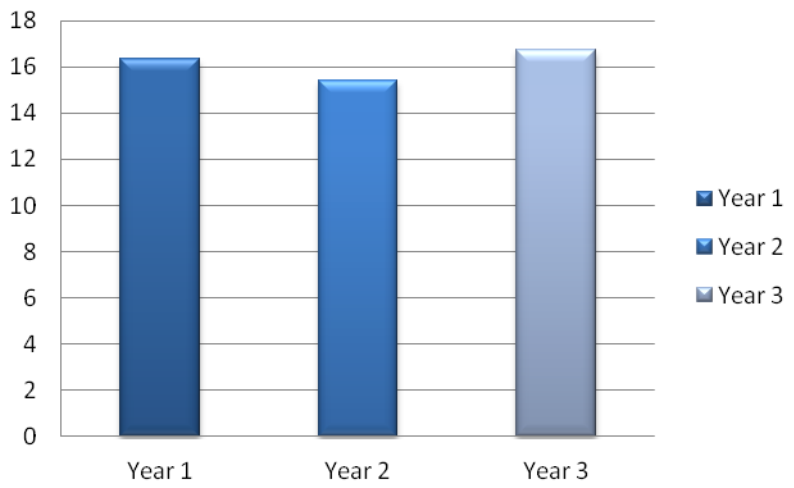


Table 4.8: Mean ethical score by year

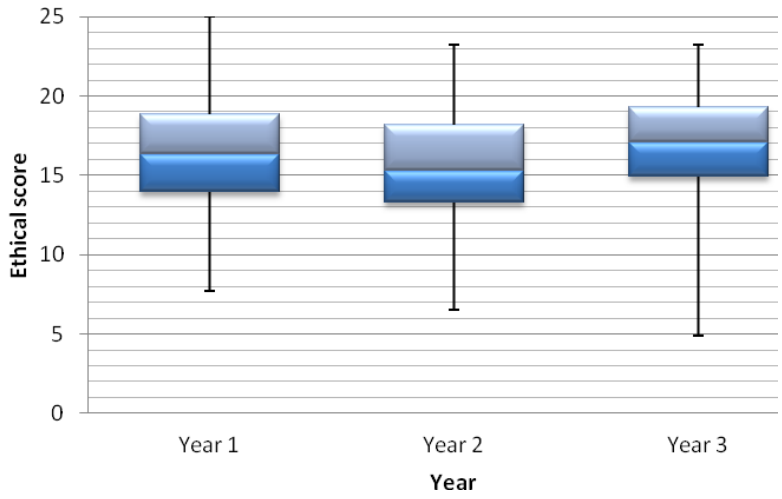
	Year 1	Year 2	Year 3	Overall
English	16.7	16.4	16.9	16.6
Geography	16.1	15.3	15.6	15.6
Animal Behaviour	16.2	14.8	17.2	16.2
Overall	16.4	15.4	16.8	16.2

The findings for each year group can be examined further to analyse the range of scores within each group (Table 4.9 and Figure 4.5). This illustrates that the median ethical score increases by year. The standard deviation from the mean is similar for all three years (max 3.6, minimum 3.5) as is the interquartile range. Although they might suggest some possibility of progression, this is perhaps misleading, particularly given that the highest ethical score of 25 was for a student in the first year of their degree, and the lowest of 4.9 was for someone in their final year.

Table 4.9: Mean ethical score and range by year

	Mean Ethical Score	Standard Deviation	Median Ethical Score	Q1	Q3	Interquartile Range
Year 1	16.4 (n=110)	3.5	16.3 (n=110)	14.0	18.9	4.9
Year 2	15.4 (n=87)	3.6	15.3 (n=87)	13.3	18.2	4.9
Year 3	16.8 (n=98)	3.6	17.1 (n=98)	14.9	19.3	4.4

Figure 4.5: A 'box and whiskers' plot of the ethical scores by year

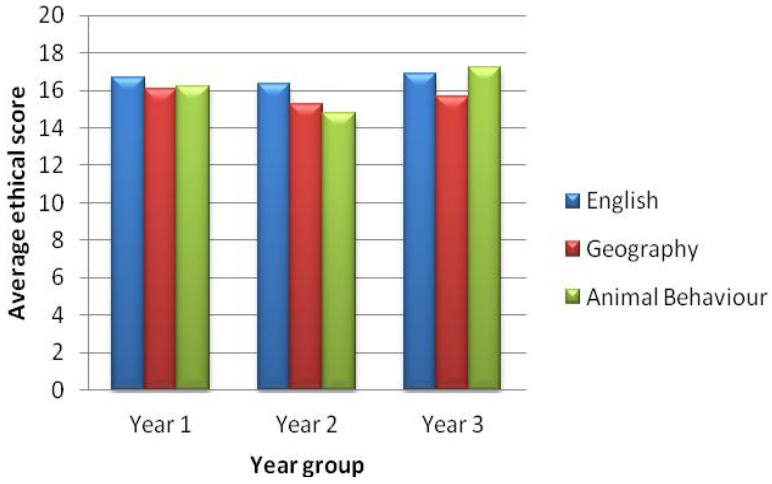


Key: Dark blue = 1st quartile range. Light blue = 3rd quartile range.

An ANOVA test to compare the means found that there was a significant difference by year (F value 3.612, $p < 0.028$, df 2). This demonstrates the differences between year 2 and years 1 and 3, suggesting that either there is no clear progression across the degree programme or that there are differences between the cohorts. This can be further analysed to investigate students' levels of ethical development at different points in the discipline programmes. This indicates some differences between the disciplines. For English and Animal Behaviour the year 3 students have developed greater awareness of the complexity of ethical issues. However all of the disciplines dip slightly in year 2. The largest difference is between Animal Behaviour in years 2 (14.8) and 3 (17.2) (Table 4.8, Figure 4.6). This may relate to the nature of the programme in Animal Behaviour. Of the response from third year Animal Behaviour students, 49 of the 52 completed the questionnaire in the first session of a module entitled: 'Ethics, Welfare and Applied Animal Behaviour'. This

is an optional third year module, although the majority (91%) of students on the Animal Behaviour programme elect to take it. The clear emphasis upon ethics within the module may mean those students who elected to take the module are more interested in the ethical issues.

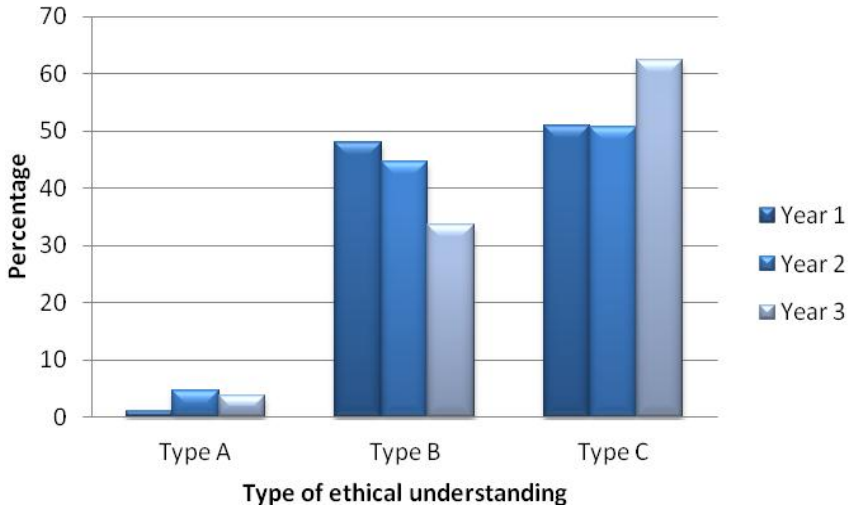
Figure 4.6: Mean ethical score by year



When the ethical scores by year are divided into the different types of meta-ethical development there also appears to be some progression towards greater ethical development by the third year of the degree (Figure 4.7). The majority of students in all three year groups were classified as Type C, the second highest percentage as Type B, and a small minority categorised as Type A. Year 3 had the highest percentage of students categorised as Type C (62%). Year 2 had a slightly lower proportion of students as Type C (49%) than Year 1 (57%). However, year 2 had more Type B students (47%) than any other year. A Pearson Chi-Square test indicates that there is a significant difference between the three different years and the types of meta-ethical development the students have demonstrated (Chi-Square value 7.537, $p < 0.023$, df 2). The overall MEQ analysis in relation to

research question two demonstrates that there are significant differences between the three year groups. However, these findings suggest differences between year 2 and years 1 and 3, this is unlikely to be direct progression between the years, but it may reflect cohort differences.

Figure 4.7: Participant ethical scores by different types of ethical development and year



4.2.3. Gender analysis

As the literature review demonstrated, although the majority of research has found that with the tools being utilised in similar studies, females often appear more developed in their ethical decision making than their male counterparts (Miori *et al*. 2011), there are exceptions (Kelger 2011; Phau & Kea 2005). This research found that women consistently received a higher ethical score (16.4) than the male participants (15.7) (Table 4.10, Figure 4.8). However, the difference is small. Using various different methods of analysis, this research has found some variation in the answer to research question three.

Table 4.10: Mean ethical score by gender

	Male	Female	Overall
English	16.2	16.8	16.6
Geography	15.4	15.8	15.6
Animal Behaviour	15.8	16.3	16.2
Overall	15.7	16.4	16.2

Figure 4.8: Mean ethical score by gender

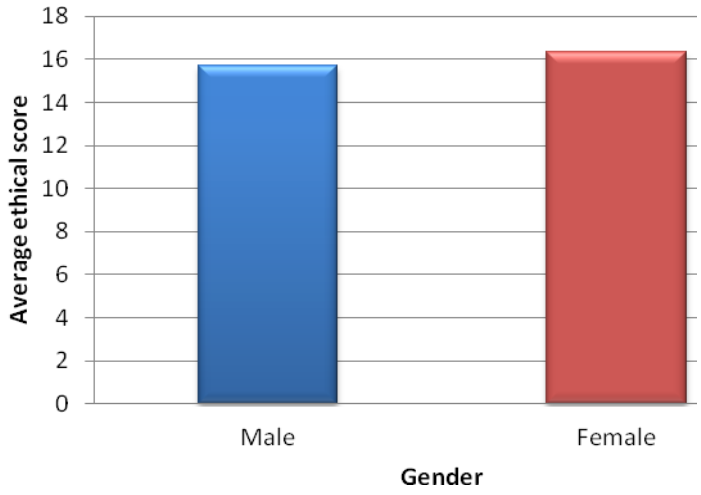
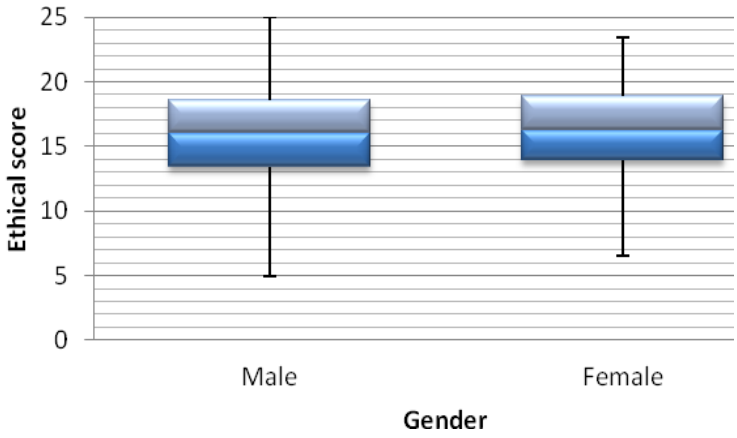


Figure 4.9 and Table 4.11 illustrates how the standard deviation (4.2) and interquartile range (5.1) are slightly higher for the male respondents than females (standard deviation 3.4, interquartile range 5.0), with the median score being slightly higher at 16.3 for females (males 16.0).

Table 4.11: Mean ethical score and range by gender

	Mean Ethical Score	Standard Deviation	Median Ethical Score	Q1	Q3	Interquartile Range
Male	15.7 (n=67)	4.2	16.0 (n=67)	13.5	18.6	5.1
Female	16.4 (n=228)	3.4	16.3 (n=228)	13.9	18.9	5.0

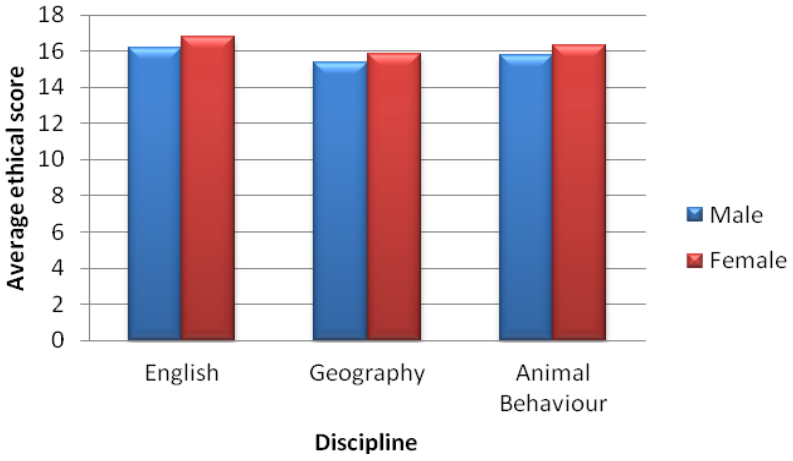
Figure 4.9: A 'box and whiskers' plot of the ethical scores by gender



Key: Dark blue = 1st quartile range. Light blue = 3rd quartile range.

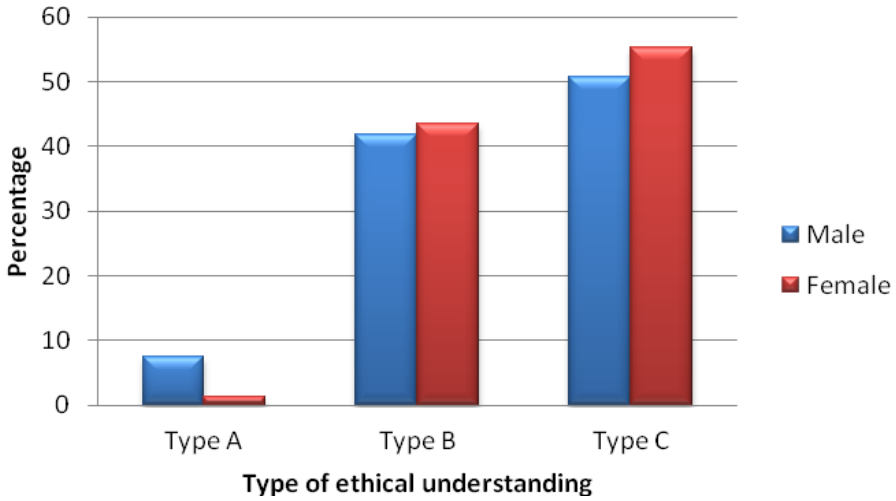
An ANOVA test to compare the means found that there was no significant difference by gender (F value 1.910, $p < 0.168$, df 2). When the means by gender are analysed by discipline the female respondents continue to receive the highest mean scores. However, the differences for Geography are only 0.5 (Table 4.10, Figure 4.10).

Figure 4.10: Mean by gender for each discipline



Overall, the majority of the responses from both genders were categorised as 'Type C' (male 51%, females 55%) (Figure 4.11). More of the female responses (43%) were classified as 'Type B' than male responses (42%), alongside a lower percentage classified as 'Type A' (1%) than male responses (8%). A Pearson Chi-Square test indicates that the difference between gender and the types of meta-ethical development is significant (Chi-Square value 7.442, $p < 0.024$, df2). The overall MEQ analysis in relation to research question three demonstrates that there is a significant difference between the genders with females being more ethically developed (using this tool) than their male counterparts. This supports the majority of studies that have found females to be more ethical than males (Miori *et al.* 2011).

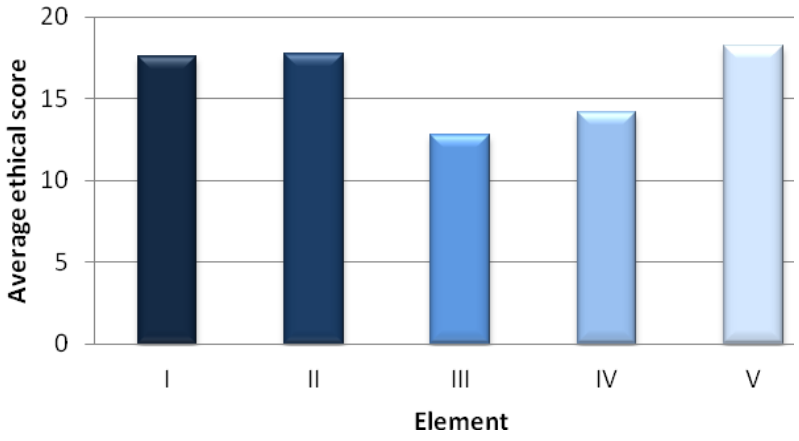
Figure 4.11: Participant ethical scores by different types of ethical development and gender



4.3 Meta-ethical questionnaire elements

Clarkeburn *et al*. (2003) based the questions in the Meta-ethical questionnaire on five elements which assessed different types of development (Figure 4.12 & Table 4.12). The questionnaire has been analysed by individual question and by each element. The findings presented here focus on the elements as these offer a focus on key themes and are enable comparison with Clarkeburn *et al*.'s study. Elements I, II and V have similar MEQ means ranging between 17.6 and 18.4, whereas Element III and IV are lower (12.7 and 14.1 respectively) (see Appendices 4-8 for the findings by discipline, year and gender).

Figure 4.12: The mean ethical score per element



A Chi-square analysis of the student scores between each of the different elements indicates that nine out of ten of the scores were significantly different (Table 4.12) (the exception being the difference between Element III and Element IV). This relates to the fact that the different elements were assessing different types of development. 'Element III: Nature of multiplitícy' (12.75) was a lower mean than the mean of the control group in Clarkeburn *et al*. (2003) (18.03). Whereas 'Element II: Role of authority' received a higher mean (17.69) than Clarkeburn *et*

al.'s (2003) control group who received 15.14[3]. These findings suggest that, overall students were slightly more comfortable with the notion that authority figures did not have the 'right' answer than the students in Clarkeburn *et al*.'s study. However, the students in this study were less comfortable with notion of multiplicity. These differences may relate to the way in which students are taught at the two different institutions. The smaller class sizes at the case study university may lead to greater discussion with the tutor and recognition that the tutor does not provide all the answers. The relative lack of comfort with multiplicity may relate to the age of the majority of the participants (85% of all of the participants were 21 and under), and their lack of life experience.

Table 4.12: Statistical differences between elements

Element	Mean		Element I	Element II	Element III	Element IV	Element V
Element I: Source and type of moral answers	17.6	P=		**0.000**	**0.000**	**0.000**	**0.000**
		Chi-Square		**51.537**	**43.912**	**28.007**	**47.670**
		df		**4**	**4**	**2**	**4**
Element II: Role of authority	17.7	P=			**0.016**	**0.006**	**0.000**
		Chi-Square			**12.174**	**14.408**	**70.805**
		df			**4**	**4**	**4**
Element III: Nature of multiplicity	12.8	P=				0.053	**0.028**
		Chi-Square				5.892	**10.836**
		df				2	**4**
Element IV: Personal responsibility and relationship with multiplicity	14.2	P=					**0.010**
		Chi-Square					**13.181**
		df					**4**
Element V: Purpose of moral discussions	18.4	P=					
		Chi-Square					
		df					

However, when each element was analysed by subject, year and gender there were only two significant differences out of fifteen tested (Table 4.13). For Element III there was a significant difference by gender. Appendix 6 illustrates how although

[3] The remaining means were within ±1.25 of the means found in Clarkeburn *et al.*'s (2003) study.

the mean score for men and women in the different disciplines were similar, the distribution of scores indicate the female scores peak much higher (47.3%) with more of them believing that there are few 'absolute right answers' than males (33.5%). This difference supports earlier research that found females to have greater ethical understanding than males (Ludlum & Mascaloinov 2004). Conner (1999) argues that women can focus on more than one problem at a time, relative to men, and that they generally prefer to solve problems through multiple activities. This may relate to the greater comfort the women in this study had with the nature of multiplicity.

Table 4.13: Statistical analysis of elements by subject, year and gender

Element	Mean		Subject	Year	Gender
Element I: Source and type of moral answers	17.6	P=	0.154	0.185	0.261
		Chi-Square	6.676	6.199	4.001
		df	4	4	3
Element II: Role of authority	17.7	P=	0.431	0.720	0.051
		Chi-Square	5.931	3.678	7.773
		df	6	6	3
Element III: Nature of multiplicity	12.8	P=	0.789	0.098	**0.045**
		Chi-Square	4.703	13.437	**9.754**
		df	8	8	**4**
Element IV: Personal responsibility and relationship with multiplicity	14.2	P=	0.086	0.697	0.550
		Chi-Square	4.913	2.210	1.197
		df	2	4	2
Element V: Purpose of moral discussions	18.3	P=	0.595	**0.004**	0.315
		Chi-Square	2.784	**15.274**	2.308
		df	4	**4**	2

For Element V there was a significant difference by year. Appendix 8 illustrates that for all disciplines 59.5% of year 3 students definitively agreed that moral discussion was valuable and enjoyable even if the group did not agree on one right answer, in comparison to 45.6% and 40.0% of students in years 1 and 2 respectively. This

significant difference may relate to their greater comfort in discussing issues generally within their studies as they progress in their degrees.

4.4. Open-ended questions

The ethical score offers a quantitative measure for interpreting differences between disciplines, years and gender. The open-ended question section complements this analysis by providing a sense of the way in which students understood ethics in their own words. This section focuses on explaining the main differences.

4.4.1. What is ethics?

When asked to define what ethics was, the responses fell into eight main categories (excluding miscellaneous responses or no answers). Student responses to this question varied from simplistic answers which defined ethics as what was 'right' or 'wrong' to more sophisticated responses which highlighted the contextual nature of an issue, and how the background of the individual influenced how people perceived what was ethical in a given situation (Table 4.14).

Table 4.14: What is ethics? Categories and examples

Category and definition	Example from each discipline
Morals Some mention of morals/morality. These responses did not often take a position as to what morality meant, but connected the notion of being 'moral' to ethics.	I thought that 'ethics' was something moral, something ethically correct.
	In reference to morals and morality of actions.
	It's like another word for moral… if that makes sense? Like saying something isn't ethical means it's not morally correct.

Right or wrong Where ethics was interpreted as knowing whether something was right or wrong, or where people follow guidelines which stated whether things were right or wrong. These responses did not recognise the contingent and contextual nature of how what is right and wrong might vary.	Ethics is a code of behaviour based on a person believes may be right or wrong.
	The difference between right and wrong. What is right and what is wrong.
	The right or wrong way to do something.
Behaviour/values Discussion of how someone's views on ethics influences their behaviour or their values. Responses were categorised as behaviour when they recognised how ethics impacted on how people might behave, providing some recognition of the complexity or variation between people.	I think ethics are certain unwritten rules that people create for themselves or within an organisation and try to adhere to.
	Beliefs and thoughts of an individual that influences their behaviour.
	What you as an individual decide or perceive is right and wrong based on morals and upbringing; varied different beliefs personal perspective on different issues.
Animal rights Relating to the rights of animals or non-human organisms.	Whether something is ethical e.g. animal testing etc.
	-
	People's opinions on selected subjects being studied. Such as animal testing etc.
Human rights Discussion of people's rights (e.g. the right to choose, the right to a better life etc.)	I think of how people treat each other when I hear the word 'ethics' I think of equality, human rights and being fair to one another.
	That everyone is treated the same. Making sure everyone's needs are catered for.
	People's rights, freedom of speech, the right to choose.
Culture Some mention of the nature of culture in their response. Recognising that ethics relates to the cultural background of an individual.	A set of unspoken rules to which we adhere in order to remain within social standards.
	Ethics is related to the background of a person: religion, age, race, gender.
	When something may be a sensitive subject. We don't want to harm or go against religion etc.
Research Mention of research directly, or implied from way they have described ethics.	Issues and/or debates concerning the treatment and welfare of participants in studies or under observation.
	Being polite when interviewing/questioning. Keeping an open mind. Not imposing your own opinions on something.
	The level at which you can carry out 'research' without interfering with privacy.
Subject specific A response which is specific to the subject being studied.	-
	Issues and subjects which explore the dilemmas that are raised i.e. carbon foot printing etc.
	The equal treatment of all living things to the best of the ability to survive e.g. cows would probably not exist if they were not used by humans but they should be awarded respect whilst alive and killed humanely with no stress or pain.
Multiple Numerous responses highlighted more than one of the above. These were generally more complex and sophisticated responses.	Ethics means to me, the subject of morals and whether a certain outcome of circumstances is the right thing to do not only in relation to the people involved but others' values as well.
	Making the right decision dependant on your personal views. Taking other people into account. Being morally correct. Being and feeling like you are accounted for.

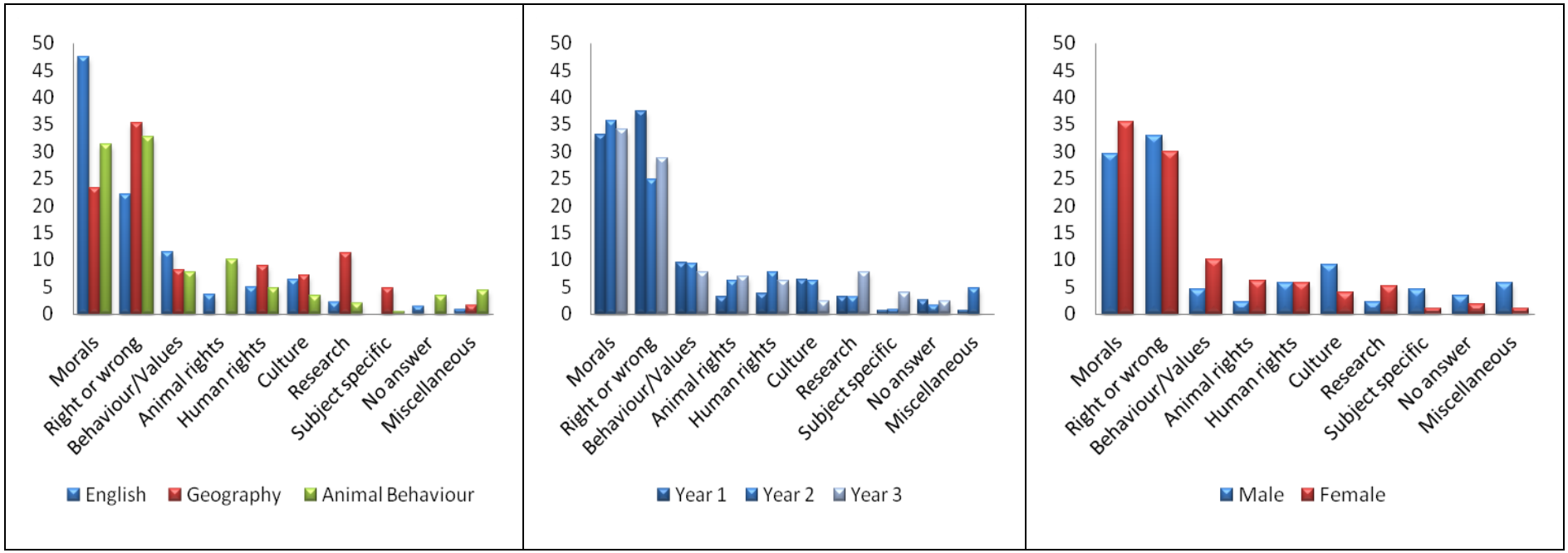
	Personal beliefs in wellbeing of humans/animals. Often personal opinion what is/is not acceptable in behaviour etc. based on laws, culture etc.
Miscellaneous These responses did not relate to the concept of ethics or indicated clear misunderstandings of the term.	Races and nationality, also whether something is ethically fair meaning general rights of people.
	Ethnicity: racial characteristics. Heritage/background. Ethics: to treat everyone equally. To be considerate of others views.
	I generally think of other races than British white, or something that is different.

The two most common categories for all three disciplines, years and genders were 'morals' and 'right or wrong' (Figure 4.13). The percentage of English students who referred to morals in some way (48%) was higher than that of Geography (23%) or Animal Behaviour (31%). This difference may relate to experience of using the term 'moral', with English students being more familiar with the term due to its use in their studies, as opposed to discussing ethical reasoning or decision making.

In a large number of these responses (English 18%, Geography 19%, and Animal Behaviour 21%) students had combined the two, for example "Ethical - what is the right thing to do? The moral path." Yet the relationship between 'moral' and 'right and wrong' in the majority of responses illustrated how students had a superficial understanding of the connection between the notions of morality and ethics. As argued earlier morals relate to the personal values of an individual, rather than recognition of the broader social context. The link therefore between right and wrong suggests that students are recognising only their individual values and not that these might vary between people (this would be the equivalent to the development of Element III in the MEQ).

More sophisticated responses recognised that ethics was broader than the individual discussing behaviour or values, or related the ideas to animal and human rights. These were close to demonstrating how an individual's morals were played out and hence how they impacted upon a broader notion of ethics. English (11%) had the highest percentage of responses which related to behaviour or values (Geography 8%, Animal Behaviour 8%). This was differentiated by gender with women (10%) noting behaviour and values more than men (5%). As might be expected a higher percentage of responses from Animal Behaviour students (10%) related their response to animal rights (English 4%, Geography 0%), whereas a slightly higher proportion of Geography students (9%) related their response to human rights (English 5%, Animal Behaviour 5%). Geographers (11%) also showed greater awareness of ethics within research (English 2%, Animal Behaviour 2%). At the time of the questionnaire the second and third year geography students had recently undertaken work in which they had to identify potential ethical issues in their research and so were familiar with the term ethics being used in connection with research. It was also notable that year 3 Animal Behaviour students had longer, more in-depth explanations as to what ethics was, perhaps reflecting the module they were studying. In summary this analysis demonstrates that overall there are few differences between disciplines, years or genders as to the definition of ethics. The majority of students had a basic understanding of what ethics was. However this was generally focused around word association about the term ethics as opposed to a recognition of the complexity of what 'ethics' encompasses.

Figure 4.13: What is ethics? Percentage of responses in each category by discipline, year and gender



4.4.2. Example of ethical issue previously studied

This question asked students to identify a specific example of where they had studied ethics in their previous education. The categories for the examples related to who was involved in the ethical issue, for example people (human rights), the environment (environmental concerns) or animals (animal rights); alongside broader areas relating to politics, culture and general research (Table 4.15).

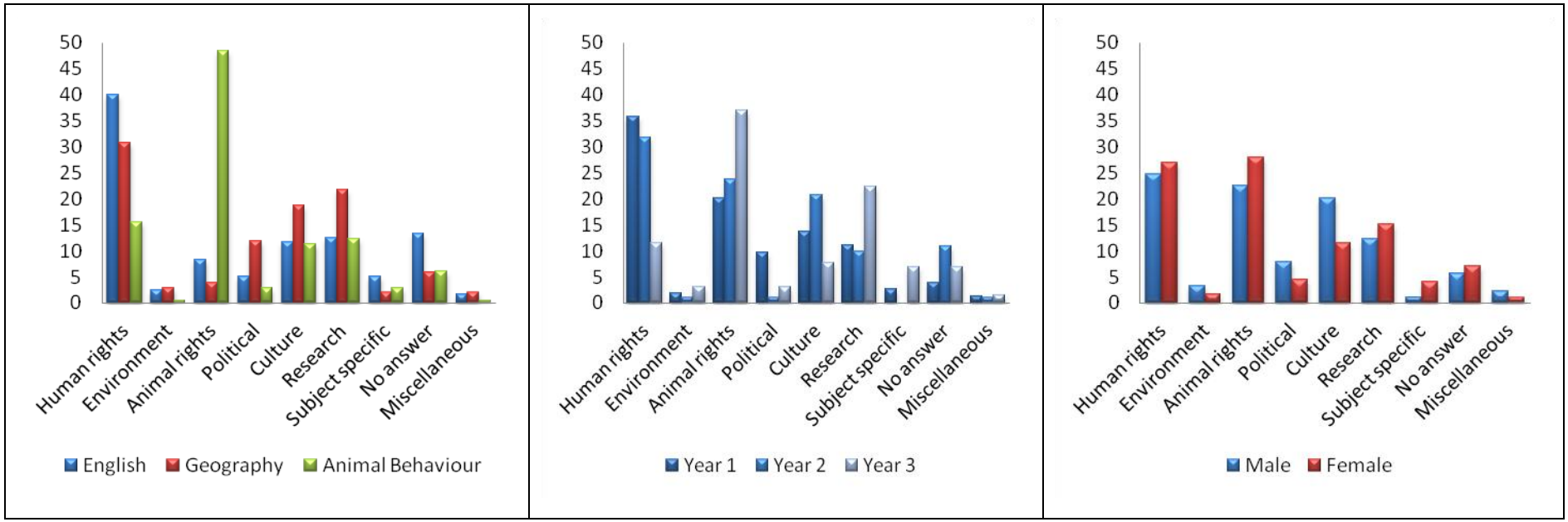
Table 4.15: Example of ethical issue previously studied: Categories and examples

Category and definition	Example from each discipline
Human rights An example of studying something to do with a person's rights (e.g. the right to choose, the right to a better life).	Euthanasia, do we have any right to decide how and when to die.
	Exploitation of children in the clothing business and education. Is it right they miss school to work and provide us with cheap clothing or are we providing them with a future.
	Abortion - good/bad, Euthanasia - good/bad.
Environmental concerns An example of studying something which relates to the environment.	Recycling
	Ethical issue of study carbon footprint of field trips, fairness in modern society.
	Greenhouse gas emissions - use of cars etc. at our leisure. Existence of zoos, captive animals.
Animal rights An example of studying something relating to the rights of animals or non-human organisms.	Drug testing on animals.
	Ethical treatment of animals.
	Wild caught animals being sold within the pet trade. Is it right to stress a wild animal in a captive environment?
Political An example of studying something relating to specific political events, or broader political discussions.	In GCSE I studied the rise of Hitler and WWII in history.
	China's one child policy.
	Abortion debates, euthanasia, capital punishment.
Culture An example of studying something that related to culture or religion in terms of ethics.	Which religion is right to you, what you believe (your opinion) in and what do you believe in.
	Religion - comparing various aspects of the church, their views and what they stand for.
	Religious bias.
Research An example of considering ethics directly in relation to research, or implied from way they have described ethics.	When creating a questionnaire I made it anonymous so it was fair to my fellow students.
	Confidentiality while doing interviews in Slapton, Devon.
	Is right to breed animals solely for the purpose of using them in experiments in labs.
Subject specific An example of ethics which was specific to the subject being studied.	Drama whether everything is performance i.e. wanking on stage, burning one's self, removing scroll from lady parts.
	How NGOs and charities have helped out LEDCs after natural disasters e.g. tsunami.

	The ethics of genetically altering an animal e.g. is it fair to have a featherless chicken to survive in hot countries to provide people with food? Chicken wouldn't be able to exhibit natural behaviour (i.e. preening) but is the sacrifice allowable to save human lives?
Multiple An example which touches upon multiple elements of the other categories.	In psychology, particularly whether people or animals were treat in an ethical way while a study had been carried out, for example a study on operant conditioning by Pavlov on dogs, we had to argue whether the treatment of dogs were ethical.
	Issue of buying flowers from supermarkets as the long lasting flowers have chemical sprays used and can cause infertility problems and respiratory problems to the employees in developing countries.
	Should animal testing be allowed, death penalty, hunting ban.
Miscellaneous An example which does not fit the other categories and the relevance or connection to ethics is unclear.	Gender.
	Theory of knowledge.
	Age in psychological studies.

When it came to examples from previous studies there was greater variety between the different disciplines (Figure 4.14). The largest number of examples came from Animal Behaviour students (48%) who identified an example of a previous study of ethics related to animal rights (English 8%, Geography 3%). Given the subject area, this is not a surprising finding. However, over the three years there is an interesting parallel between a decrease in the examples of human rights identified (Year 1: 36%, Year 2: 32%, Year 3: 12%) as examples of animal rights increase (Year 1: 20%, Year 2: 24%, Year 3: 37%). Predominantly this relates to the Animal Behaviour students and their greater recognition of animal rights as ethical issues at different stages of their degrees. As in their definitions of ethics, a higher proportion of Geography students (22%) provided examples of ethics in relation to research (English 13%, Animal Behaviour 12%). Overall there are few differences between disciplines, years and genders in terms of the ethical issues they had discussed prior to University.

Figure 4.14: Example of ethical issue previously studied: Percentage of responses in each category by discipline, year and gender



4.4.3. Example of ethical decision

The final open question of the questionnaire asked students to identify an example of an ethical decision that they had made in the past. The examples categorised in Table 4.16 were often short statements without much detail about the reasons why a decision or choice involved the consideration of ethics, or how it was dealt with in an ethical manner. Often the examples illustrated general decisions or choices, rather than necessarily *ethical* decisions or choices. In hindsight greater explanation as to what was meant by an 'ethical' choice might have helped here. However, it may have been that students either did not feel that the choices they had made were underlain by ethics, thereby indicating a lack of understanding of the extent of ethical issues within society, or they were concerned about being judged by the choices they had made.

Table 4.16: Example of ethical decision: Categories and examples

Category and definition	Example from each discipline
Research An example which involved some form of research.	I decided to fill in this questionnaire.
	Keeping the names of people I have interviewed confidential.
	Use of invertebrates during lab practicals -put through stressful conditions and disposed of but not killed - should they have been used and should they have been humanely killed?
Academic An example which involved academic issues.	I could have looked at the answers to a test in school before taking it, but chose not to as I have a strong guilty conscience.
	Human or physical? [the choice between which type of geography to take]
	To not cheat on exams or tests.
Personal An example which involved individual personal issues.	A guy called me a name so I was undecided whether to punch him.
	Sex and education.
	Not becoming vegetarian.
Social An example which involved dealing with other people.	Whether to grass my friends out on school property. I chose to notify a teacher.
	A very distinct and problematic lack of integration at high school between Pakistani Muslims and the rest of the student population.
	Standing up for people being bullied.

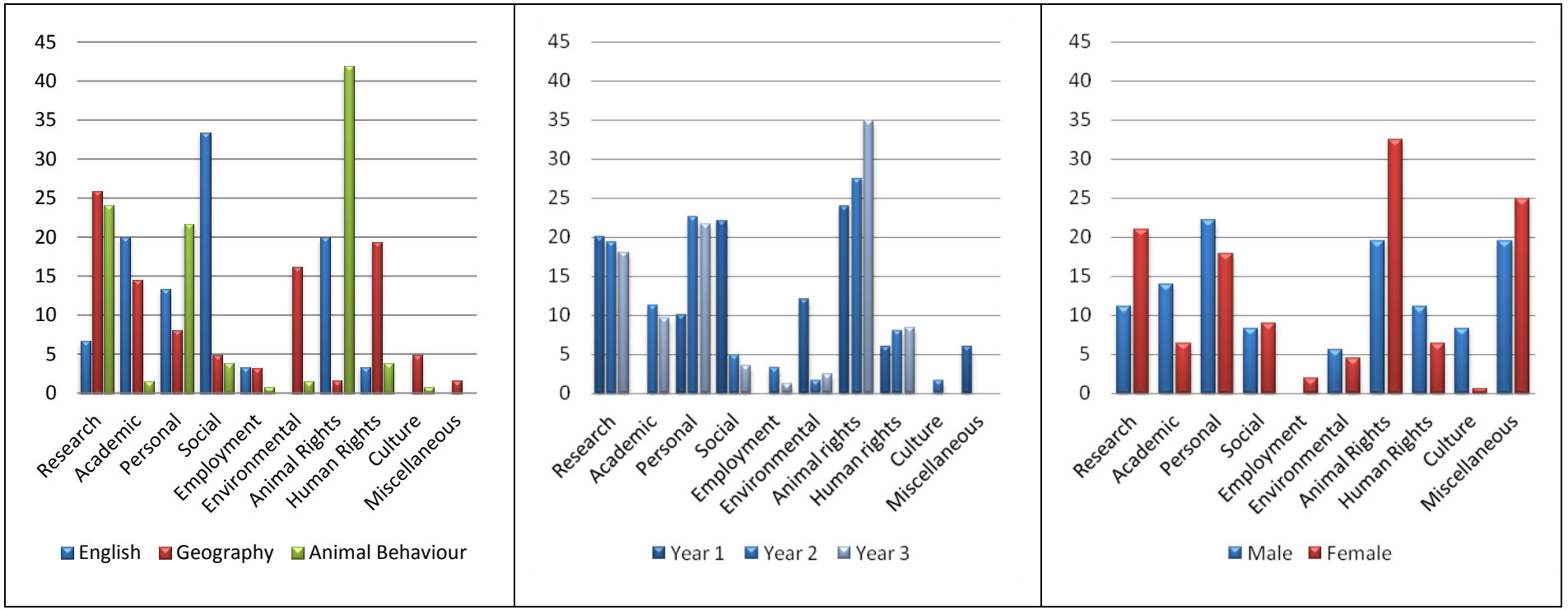
Employment An example which involved some form of employment, whether paid, voluntary, or as part of their studies.	Not to work, and be supported by my boyfriend and sister felt unethical, but needed consideration towards negative distractions.
	Working at Oxfam - asking people for money to donate to charity. I don't necessarily agree with it unless they can be sure the money will go to the right place.
	On work based learning.
Environment An example which involved considering the environment.	-
	Buying recyclable products or products that have been recycled (paper).
	Ride my bike or make instead of driving a car.
Animal rights An example which involved considering the animal rights.	Have used make up that is not tested on animals.
	Vegetarianism: I chose not to eat meat because of ethical issues and environmental issues.
	Not buying eggs on campus as they are not 'free range'.
Human rights An example which involved considering the human rights.	Profile/prochoice for abortion and how many weeks.
	Should I choose fair trade coffee/product when the opposite choice appears cheaper?
	The rights go to university and learn without prejudice and restrictions, financially or by health issues.
Culture An example which involved considering culture within an issue.	-
	Respecting different religious backgrounds and different opinions and controversial issues such as abortion, stem cells, etc.
	-
Multiple An example which touches upon more than one of the categories above.	Do I lend my notes to someone who couldn't be bothered to make their own in seminars?
	Someone needed help with work but they started copying mine - had to choose whether to let them copy or not.
	Not keeping an animal (rabbit) in a university house. I thought of the ethics in this choice as it would not have the best life.
Miscellaneous An example which does not fit with the other categories and which lacks a clear explanation as to how it relates to ethics.	-
	Which university to attend in relation to statistics and environment.
	Moving away from family.

For all of the disciplines, years and both genders, the majority of students did not provide a response. More men (51%) chose not to answer than women (41%) with 70% of English, 44% of Geography and 33% of Animal Behaviour students not providing an answer. This is an interesting difference considering the marginally higher score the English students received for the MEQ element of the questionnaire, yet such a high percentage were unable (or unwilling) to provide an

example of an ethical decision they had made in the past. There was also a clear decrease in the number of 'no answer' responses as the years increase (Year 1: 58%, Year 2: 40%, Year 3: 30%). This suggests that students further into their degrees were more confident in answering the question or had a greater understanding of what an answer entailed.

Animal rights once more dominated the responses for the Animal Behaviour students who had provided answers with 28% identifying a decision which related to animal rights (English 6%, Geography 1%). This was dominated by the Year 3 and female students. The third highest percentage in relation to ethical decisions related to research. This was highest for Geography (17%), closely followed by Animal Behaviour (16%), however English was much lower at 2%. This might be a reflection of the way in which research is understood in the arts in comparison to the social and pure sciences. Overall this has illustrated few differences between the disciplines or genders in terms of ethic decision making examples, however the reduction in the number of no answers by year, at least suggests that there is some progression in confidence to answer the question.

Figure 4.15: Example of ethical decision: Percentage of responses in each category by discipline, year and gender



4.5 Summary

This chapter has focused on the first three research questions (Table 4.17). Overall the findings suggest few differences between disciplines, with none of the meta-ethical development findings being statistically significant. However, some differences were noted in the open-ended questions with regard to the English students' definitions of ethics, relating to morality rather than right and wrong as was the case for the majority of Animal Behaviour and Geography students. There are some differences by year; however some of these differences may illustrate differences between cohorts rather than progression. As with previous research women have been shown to be more ethical than their male counterparts overall, alongside being more comfortable with the nature of multiplicity.

Table 4.17: Research questions key findings

Research question	Key findings
What are the differences and similarities in the ethical development of students in three academic programmes in the arts, social and pure sciences?	• Similar mean ethical scores for all three disciplines • No significant difference between disciplines and types of meta-ethical development • English students identified morals in their definition of ethics more than other disciplines • Animal Behaviour students identified animal rights as an example of ethics within their previous studies more than any other discipline
What is the extent to which there is progression in the ethical development of students in different years across the three academic programmes?	• Similar mean ethical scores for all three years • A significant difference between years and types of meta-ethical development • A significant difference by year for Element V the purpose of ethical discussion • The percentage of 'no answers' to providing an example of an ethical choice decreased by year
Is there any difference in the ethical development of students by gender across the three academic programmes?	• Similar mean ethical scores for both genders • A significant difference between gender and types of meta-ethical development • A significant difference by gender for Element III nature of multiplicity

Chapter 5

Tutor reflections on the nature of ethical thinking within the disciplines

This chapter discusses the tutor interview material and how it aligns with the findings on the development of their students' ethical thinking. Hence it addresses the fourth research question: 'What are the differences and similarities in the nature of the ethical thinking expected by tutors between the three academic programmes and to what extent does this align with the students' ethical development?' In Chapter 2 'meta-ethical development', as assessed by the questionnaire, was defined as how students construct ethical reality, how they interpret the nature of ethical properties, attitudes and judgements. This relates to the concept of 'ethical thinking' whereby how students construct ethical reality influences their ability to think ethically. This chapter explores tutor expectations of ethical thinking, comparing these with the way in which the students constructed relevant elements of ethical reality in the questionnaire findings.

Ethics was considered relevant to all of the disciplines, albeit to different extents. The tutors' interpretation of ethics generally related to ideas of 'ethical sensitivity' (Clarkeburn *et al.* 2002), in which students perceive the ethical implications of a situation. As noted in Chapter 2 whilst ethics is a part of the Bioscience and Geography benchmark statements it is absent from the English statement. However, interviewee English 1 argued that:

> "Literature is the record of human experience, and therefore ethics ought to be enshrined, as at least something that someone ought to be aware of. All the time we are teaching empathy. Literature is about getting inside somebody else's mind and understanding their, perspective, and to do that without an ethical benchmark seems weird."

Interviewee 'English 1' argues convincingly why ethics is fundamental to the discipline. Yet ethical awareness is not mentioned within the subject benchmark statement and is absent from the programme specification suggesting that the relevance of ethics to English is marginal. The difference between the relative importance of ethical sensitivity here appears to relate to the extent of explicit discussions about ethics within the subjects. Whereas in the Geography and Biosciences benchmark statements (QAA 2007a; 2007b), ethics is highlighted regularly in relation to predominantly empirical research, ethical standards and professional codes of conduct. These are the points at which ethics is discussed explicitly. In English clear ethical guidelines are not needed to support empirical research in the discipline. As undergraduate English students are not normally involved in empirical research involving human or animal subjects, there may be a perception that an explicit discussion on research ethics is unnecessary. Yet this is a rather narrow interpretation of research ethics.

Despite the differences in the subject benchmark statements all three disciplines addressed, or claimed to address, ethical issues within their subject areas. However, they were rarely explicit about doing so, with the exception of the need for ethical approval for dissertations which were working with people or animals. An implicit approach to teaching about ethics limits opportunities to engage in

'moral reasoning' (Clarkeburn *et al.* 2002), in which students use practical problem solving strategies to make a judgement about a course of action. In English it was explained how: "it's more important in terms of an issue that emerges from the literature that we're studying rather than as stand-alone issue itself" (English 2). The other two disciplines also indicated how ethics was an issue which emerged from the subject content rather than discussed separately. When shown the findings from the questionnaire and the similarities between English and the other two disciplines, one of the English tutors questioned: "maybe we are teaching ethics by stealth?! It's just utterly embedded" (English 1). Animal Behaviour and Welfare commented in a similar manner:

> "it's all very important, and relevant, but I think we would all probably say it's a bit like key skills, it's embedded, you know it's in there somewhere" (Animal Behaviour 2).

Although there are taught prescribed modes of behaviour required when looking after animals, ethics and helping students to think ethically is predominantly embedded into teaching and learning rather than made explicit. The geography tutors agreed with this and raised the question as to whether it is appropriate to approach teaching ethics in a different way:

> "We do discuss ethical issues, it's just that it is not packaged as ethical issues, and do we really want to go down the route of drawing it and saying its ethical issues?" (Geography 5)

This is an important and interesting question, especially given the findings from the questionnaire and a lack of difference between the three subject areas. Highlighting issues as 'ethical' may discourage student enthusiasm for a topic, yet by doing so it is possible to engage in moral reasoning about the issue. By not explicitly discussing the ethical implications of an issue, the opportunity to enhance

students' sensitivity to potential ethical issues is also reduced. The question as to whether this is appropriate for each of the different disciplines requires a discussion of the types of ethical thinking different subjects wish for their students to have by the time they graduate.

As argued in Chapter 2, higher education has an important role to play in developing students with the ability to think ethically (Hay & Foley 1998; Smith 1995) recognising moral reasoning to be part of professional responsibility (Boni & Lazano 2007; Nicholson *et al*. 2009; Robinson 2005). Although students arrive at university with varying degrees of ethical development, their higher education degree should allow them to leave with an enhanced level of ethical sensitivity and moral reasoning, as this will help students to manage the supercomplexity they face when they graduate (Barnett 2000). The case study university establishes this as an institutional graduate attribute, yet the findings from the MEQ suggest there is work to be done to support students' ethical development. This raises the question as to whether ethical reasoning should be a part of disciplinary programmes. None of the programmes explicitly identify 'ethical reasoning' as either a programme outcome or a graduate characteristic. Rather the nature of the ethical thinking tutors discussed as being an expected outcome from their programmes related to more generic abilities which could be applied to ethical issues.

The tutors highlighted some similarities in the ethical thinking they wanted their students to develop. One such similarity was the ability of their students to reflect

upon issues from different perspectives. Animal Behaviour and English both highlighted the skill of empathy:

> "one would hope that they acquire empathy for the welfare of animals, it is embedded in their course - the concept of welfare" (Animal Behaviour 2)
>
> "[it's] a sort of process during the course of that module of watching them change and mature and develop skills of empathy and understanding that perhaps they haven't had previously" (English 1)

For Geography, it was argued that students should learn to reflect upon the rights of others in research:

> "I would expect some of the physical geographers to have a grasp or an awareness of ethics such as when it came to trespassing when doing field work" (Geography 3).

All three disciplines required students to consider the perspectives of others. This relates to developing students' ethical sensitivity whereby they can perceive the ethical implications of a situation. However, the questionnaire found that Element III of the MEQ, addressing the nature of multiplicity, had the lowest mean score (12.75) of all the elements. This suggests that ethics as 'empathy' was the weakest element across all three disciplines. This might be addressed by making ethics within teaching more explicit, but whether this is a desirable teaching strategy is more debatable. One way round this might be to make ethical issues more explicit towards the end of studying a topic. As one of the geography tutors suggested, ethical thinking could be identified as a specific skill for students, and through the completion of a skills audit with students at the beginning and end of the year, ethical thinking could be explicitly identified in their past studies (Geography 5). These findings indicate that more needs to be done to support students in

recognising how different people perceive issues in different ways. This is discussed further in Chapter 6.

The disciplines were also similar in their concern for the ability of students to recognise the complexity of ethical issues independently. Animal Behaviour 1 reflects how:

> "one of the funny things I've noticed, is that they - the students that we get - obviously love animals and they love going to the zoo, and nobody ever seems to question the ethics of the zoo which I always find, almost worrying really. Because I worry about zoos but they don't seem to, it's within our culture, and they accept zoos where they wouldn't accept something like vivisection" (Animal Behaviour 1).

In discussing the support given to help students with their dissertation, one tutor commented: "We are almost spoon feeding them, saying this is what you need to consider" when applying for ethical approval (Geography 5). This referred to a list of 5 key areas (informed consent, anonymity, confidentiality, cultural awareness, and dissemination) which students have to consider when applying for ethical approval to conduct their dissertation projects. Using the example of Ian McEwan's *Atonement*, English 2 noted:

> "I would hope that by the end they would be steering towards a more complex idea of morality and not opting for a simplistic: 'I want somebody to teach me the right answer to this approach'."

As already mentioned, the mean for Element III which addressed the nature of multiplicity by asking students to position themselves in relation to the extent to which moral questions had absolute right answers, was the lowest of all the elements. This suggests that there is still some work to be done to help students to

recognise complexity in moral issues. In terms of thinking through issues independently, Element IV highlights personal responsibility, which had the second lowest mean MEQ score (14.15) suggesting that students are still developing in their abilities to think through issues themselves.

The disciplines, however, were distinct in the way in which their ethical thinking was assessed. English and Geography both aim to support students to become self-aware and reflective, rather than assessing them on specific disciplinary behaviour or knowledge:

> "There would be no requirement really for them to be assessed as moral individuals" (English 2)
>
> "It's just more of making them self-aware of some of the choices they make" (Geography 6)

In contrast, Animal Behaviour students are assessed directly on their disciplinary knowledge: "They are assessed on their ability to handle an animal in the right way. Which I would say has an ethical element in it" (Animal Behaviour 1). As Animal Behaviour 1 points out, the way in which an animal is treated is underlain by ethical perspectives. However, in contrast to the other two disciplines, there are particular rules and laws in place, for example the 'Five Freedoms' that animals are legally entitled to. Students are assessed on their knowledge and understanding of these laws (Animal Welfare Education 2012). This focus on more prescribed ethical thinking and practice did not however draw out differences between disciplines in the students' ethical scores from the questionnaire.

The nature of the ethical thinking skills highlighted by tutors across the disciplines, relate to the broader skills of critical thinking (Wolf *et al*. 2010). The ability to analyse, interpret, infer, explain and evaluate an ethical issue draws upon broader critical thinking skills (Facione 2000). Although the programme outcomes rarely mentioned ethics explicitly, all of them identify these broader skills. Table 5.1 explores these different abilities, highlighting how they are identified in the programme outcomes or programme graduate characteristics. With the exception of the 'Knowledge and Understanding' of the prescribed mode of appropriate behaviour for looking after animals, the other abilities are related to cognitive, key or transferable skills. The findings from the MEQ demonstrate that these abilities are significantly weaker elements of the students' ethical development. As the ability to think ethically is not presently a programme outcome or a programme graduate characteristic, but is recognised as a university level graduate attribute, this suggests that more needs to be done at the programme level to support student ethical development.

Table 5.1: Expected ethical thinking in relation to programme outcomes and student development

Expected ethical thinking (interview analysis)	Programme outcome or graduate characteristic (Programme Handbooks)			Student development (MEQ)
	English	Geography	Animal Behaviour	
Ability to recognise complexity and to reflect upon issues from different perspectives	**Cognitive skill**: Students will have developed a grasp of the ways in which meaning is produced and of the aesthetics of reception. **Transferable skill:** Students will be able to apply knowledge derived from abstract, theoretical, and ideological sources to practical situations. They will have the capacity to interrogate and critique various assertions, claims and arguments, weighing and adjudicating between alternative positions. **Graduate characteristic:** The graduate will be self-critical and reflective with a high level of skill in problem-solving, project management, IT and multimedia skills.			Nature of multiplicity lowest mean score (12.75)

	Key skill: Demonstrate an ability to identify, evaluate and propose answers/solutions to complex problems. **Cognitive skill:** Abstract, synthesise and critically evaluate information from a wide range of sources.	
	Cognitive skill: Bring a critically and theoretically informed perspective to relevant issues and current developments (as appropriate) in the study of animal behaviour and welfare. **Graduate characteristic**: The ability to sift evidence and evaluate arguments.	
Ability to reflect upon issues independently	**Transferable skill:** Students will develop skills in: problem-solving. **Transferable skill:** Students will also develop a range of life skills.	Personal responsibility – second lowest mean score (14.5)
	Practical skill: Undertake field-based research in an effective manner, including careful consideration of both ethical and health and safety issues **Key skill:** Demonstrate an autonomous and confident approach to study	
	Key skill: Demonstrate a degree of autonomy and independence in relation to learning	
Ability to learn laws and prescribed modes of behaviour	N/A	A lack of difference between disciplines in MEQ suggest learning prescribed modes of behaviour did not influence development
	N/A	
	Knowledge and understanding: Demonstrate an understanding of key ideas, especially in the following areas: animal welfare, health and disease, research methods and ethics	

This chapter set out to analyse tutor expectations of student ethical thinking in the three academic programmes. It has found that there are similarities in the nature of ethical thinking required in the disciplines. These include three main abilities: 1) to empathise with others and recognise different perspectives on issues; 2) to recognise the complexity of issues; and 3) to take responsibility and consider issues independently. Two points are significant from this: 1) these abilities are all broader than just 'ethical' issues, they relate to critical thinking and higher level skills more generally; 2) these abilities, as assessed by the questionnaire, were found to be the weakest for the students across all three disciplines. The final

chapter concludes this dissertation and reflects on all of the findings to discuss the implications for teaching and learning.

Chapter 6

Conclusions

In conclusion, this chapter summarises the findings from the first four research objectives:

1. To analyse the ethical development of students in three academic programmes in the arts, social and pure sciences.
2. To investigate the extent to which there is progression in the ethical development of students in different years across the three academic programmes.
3. To examine the ethical development of students' ethical thinking by gender across the three academic programmes.
4. To analyse how the nature of ethical thinking expected by tutors varies between disciplines and evaluate the extent to which this aligns with the students' ethical development.

This is followed by a discussion of the implications of these findings by addressing the final objective of the research:

5. To discuss the implications of the findings for enhancing the teaching and learning of ethics.

The research found that there were no significant differences between disciplines in terms of student meta-ethical development. There was some evidence of differences between years, but not clear evidence of progression over the three years of the undergraduate programme. The main differences found were between male and female students, with male students demonstrating less ethical development than their female counterparts. The research with the tutors found there to be few differences between disciplines in terms of the nature of ethical thinking expected; these ethical skills were strongly related to generic higher education skills. Reflecting on the findings from the tutors and students, this

dissertation has highlighted how tutors' expectations of the type ethical thinking of students do not correlate with the development demonstrated by the students in the meta-ethical questionnaire (MEQ). The thinking tutors expected were the weakest elements in the MEQ findings.

6.1 Implications of findings for teaching and learning

The mismatch between the tutor expectations of student ethical thinking abilities and the findings of their students' meta-ethical development indicate the need to reflect on the teaching and learning strategies in place for teaching ethical thinking. As argued earlier, the ability to think through ethical issues has a symbiotic relationship with the ability to think critically (Boni & Lozano 2007). Designing effective ways to support the development of these abilities generally are also likely to support the meta-ethical development of students at the same time (Clarkeburn *et al*. 2003). Two related concepts which may offer useful insights into designing effective teaching and learning strategies are troublesome knowledge and threshold concepts.

Troublesome knowledge is the idea that students find certain types of knowledge particularly challenging (Meyer & Land 2003). Perkins (1999) describes troublesome knowledge as that which appears counter-intuitive, alien, or incoherent. This notion of 'alien' knowledge may help to interpret student difficulties with ethics. Alien knowledge is understood as that which emanates from another culture or discourse (Meyer & Land 2003). As demonstrated by this research students struggled to recognise multiple perspectives on issues. This

relates to challenges of understanding different ways of seeing the world i.e. different discourses.

The notion of threshold concepts offers further insights. A threshold concept is transformative, probably irreversible, integrative, often troublesome and often disciplinarily 'bounded' (Irvine & Carmichael 2009). Meyer & Land (2003) have associated the concept with going through a portal, irrevocably transforming the student's understanding. Although ethical thinking is a skill rather than a concept, and is not, as we have seen, disciplinary 'bounded', elements from the theory of threshold concept may still offer useful perspectives in two ways: 1) the element of integration, and 2) the notion of liminality. Davies (as cited by Meyer & Land 2003) discusses the integrative characteristic of threshold concepts in relation to troublesome knowledge:

> "'Integration' is troublesome because you need to acquire the bits before you can integrate, but once you've got the bits you need to be persuaded to see them in a different way" (p. 6).

Focusing on the complexity of ethical situations, this characteristic of a threshold concept, illustrates how in terms of thinking ethically, students need to integrate information from a range of different perspectives. This is troublesome for students as the complexity of the different kinds of information students are dealing with as they assess ethical issues are inconsistent, paradoxical in nature, or may contain subtle distinctions (Meyer & Land 2003). Secondly, the characteristic of liminality highlights student challenges with ethical thinking. Meyer & Land (2003) explain how

> "difficulty in understanding threshold concepts may leave the learner in a state of liminality (Latin limen – 'threshold'), a suspended state in which understanding approximates to a kind of mimicry or lack of authenticity" (p. 10).

When it comes to ethical development the suspended state relates to the point at which students are on the edge of grasping the nature of multiple perspectives and complexity.

These insights have implications for devising effective learning and teaching strategies. When dealing with troublesome knowledge and threshold concepts it is important to engage with students in a way which will most benefit the learner in terms of achieving understanding (Hall 2010). Several of these approaches cast the learner in a role as: "*active learners* (where knowledge and understanding are actively acquired); *social learners* (where knowledge and understanding are socially constructed) and *creative learners* (where knowledge and understanding are created or recreated)" (Phillips 1995; cited Hall 2010: 49). As active learners, students play an active role in their learning, moving beyond listening, reading and working through exercises to discuss, debate, hypothesise, investigate and take viewpoints (Perkins 2006). Active learning through activities which encourage students to discuss and debate issues from different perspectives offers potential to support students in understanding how people have different views on ethical issues. Constructivists often emphasise how knowledge and understanding are socially produced (Perkins 2006). Discussing ethical issues with others and recognising that there are multiple perspectives on issues will help to support students to understand how 'truth' varies with interest groups. Finally, the

opportunity for students to create or recreate knowledge may support student learning (Perkins 2006). For example, rather than debating and discussing ethical scenarios, students could create their own ethical scenarios for discussion within the group. A combination of these approaches may help to support students in the key areas where they appear to struggle most: recognising multiplicity and complexity.

One example of a learning strategy that could bring together these three different 'roles' for the learner is debate. The author has argued elsewhere how debate can support the development of critical thinking skills (Healey 2012). Debate may be facilitated in a variety of different formats including role play (Tyrell 2010), panel debates (Green & Klug 1990), and debate between two students (Healey 2012). This may be a 'social learning experience' as students work together to prepare for and 'compete' in the debate; an 'active learning experience' as students learn through the activity of the debate; and a 'creative learning experience' as students design the focus of the debate, decide on the materials to be used and construct question(s) for the debate.

Finally, depending upon whether ethical decision making is seen as a graduate or programme specific skill influences how ethics might be included in the undergraduate curriculum. As a graduate skill linked to employability it might be taught centrally within institutions, bringing students together from a range of disciplines as a separate optional session. Whereas if it is understood as a programme specific skill there are two ways it might be addressed: 1) As a separate

module within a disciplinary programme, focusing specifically on ethics thereby raising student awareness of ethics directly. 2) Embedded into existing modules focusing upon the ethical issues underlying existing discussions. This research suggests that ethical thinking should be a specific programme outcome.

The relevance of ethics to each of the disciplines discussed here has been highlighted, yet this research has also demonstrated the nuances and disciplinary specificity of the discussions (Jenkins 1996; Humber & Morreale 2002). It is essential that in reconsidering the approach to teaching ethics that these disciplinary nuances are not lost, as this is where the main interest lies for the students (Healey 2000; Valentine 2005; Pace & Middendorf 2004). As for whether ethics should be taught as an additional area or embedded within current content, the discussions with tutors highlighted that there are positives and negatives to both approaches. As an additional module, ethics would be explicit to students, enabling focused analysis and discussion of ethical issues. However, by segregating it from the disciplinary content students may compartmentalise their learning and envisage ethics as an 'add-on' to their studies rather than a fundamental element. By embedding ethics into existing teaching some of these issues are overcome. Here ethics is made a part of the discussion of general content. Yet, as has been demonstrated in this research, there is a danger that ethics can be so embedded that students are unaware that they are studying ethical issues. They understand such problems as disciplinary issues, rather than recognising them to be ethical. A sensible strategy to adopt would be to make ethics more explicit within current content, without undermining the main approach. By embedding ethics through

active, social and creative learning within current disciplinary content, students have the opportunity to learn that ethics is part of the discipline.

6.2 Limitations and reflections

This research had three main limitations. Firstly, the meta-ethical questionnaire (MEQ) itself was limited as it assessed a particular type of ethical development, measuring meta-ethics, as opposed to normative or applied ethics. Students may have indicated their response in relation to where they think the research wanted them to be, rather than where they actually believed they were. However, in order to be comparable with Clarkeburn *et al*.'s (2003) study it was necessary to use this same tool. The second limitation relates to the first. By only using a questionnaire to assess student's ethical development it was not possible to follow up with students why they had answered as they had. Time limitations prevented further discussion with the students, as did the issue of how comfortable students would feel discussing ethics one on one. Finally, as the research took place with three independent year groups it was not possible to convincingly make conclusions as to progression during degrees, as the findings may relate to cohort differences. A longitudinal study over multiple years would offer data which could address this. These limitations suggest fruitful avenues for future research.

6.3 Future research

This research adopted a comparative case study approach. This means that the findings are specific to these cases studies, and as such may not be generalizable to other cohorts or universities (Cousin 2005; 2009). That said, the findings raise

interesting questions for further research in other institutions, disciplines and with different cohorts in the case study disciplines at this University (Table 6.1).

Table 6.1: Further research questions

	Questions
Institutions	• Do English, Geography, and Animal Behaviour and Welfare receive similar ethical scores in different institutions? • If not, what are the differences between a) the students, b) the nature of the way they are taught?
Disciplines	• Do the findings alter if the specific subjects chosen to illustrate the arts, social and pure sciences are changed? • If so, what are the differences between a) the students, b) the nature of the way they are taught?
Cohorts	• Do the findings at the case study university alter with different cohorts? • Do the findings at the case study university change as the original cohorts' progress through their university studies?
Teaching methods	• How is ethics taught in different disciplines, different institutions and different countries? • Is ethical thinking taught differently at postgraduate level? • What impact do particular teaching methods have on ethical thinking and development?
Qualitative methods	• How is ethics understood in different disciplines? • What do students believe influences the way they understand ethics the way they do?

Understanding how best to support the meta-ethical development of students and ethical thinking skills is becoming increasingly important in response to recent political and financial scandals (Gao *et al*. 2008; Ruhe & Lee 2008; Carrell 2009). With the introduction of up to £9,000 fees for higher education in the UK, students are even more likely to consider their prospects in the graduate employment market (Foskett *et al.* 2006). Institutions and programmes which provide students with an awareness and understanding of ethics within their own discipline offer the opportunity for graduates to stand out from the crowd. Indeed, Bauman (1993: 16-17) would argue that:

> "Going about our daily affairs … we need moral knowledge and skills more often, and more poignantly, than either knowledge of the 'laws of nature' or technical skills".

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Appendix 1

Ethical thinking in a the disciplinary context

This short questionnaire is part of a teaching and learning project being conducted in the Learning and Teaching Institute. The project aims to analyse how different disciplines teach and understand ethics. You are invited to complete this questionnaire, as your views would be very helpful to our research and will be used to help us understand how to support your learning. More information about the project is available on the Participant Information Sheet at the end of this questionnaire. An electronic version of this questionnaire is available for download at: http://ganymede.[redacted].ac.uk/index.php?page_id=1528556.

Your completion of this questionnaire is entirely voluntary. The information collected will be anonymous.

Information about you

Please tick next to the relevant information about yourself:

Gender:	Male [ ]	**Age**:	<18 [ ]	**Year**:	Level 4 [ ]
	Female [ ]		18 [ ]		Level 5 [ ]
			19 [ ]		Level 6 [ ]
			20 [ ]		
			21 [ ]		
			22-25 [ ]		
			26-30 [ ]		
			31-40 [ ]		
			41-50 [ ]		
			51-60 [ ]		
			>60 [ ]		

Programme of study:

[ ] Single Honours English

[ ] Combined Honours English AND (please indicate)

.....

[ ] Single Honours Animal Behaviour and Welfare

[ ] Single Honours Animal Behaviour

[ ] Combined Honours Animal Behaviour AND (please indicate)

.....

What does the term 'ethics' mean to you?

For example, what do you think of when you hear the term?

In your previous studies at university or school, please provide an example of an ethical issue you have studied:

Please provide an example of an ethical choice that you have faced or made as part of your school or university related activities:

Your Thoughts On Ethics

Please complete the following by putting an X in the box which represents the statement most close to your opinion **(one X per line)**. Please be honest about your views, there are no right or wrong answers, where you position yourself in relation to the statements reflects your personal perspectives on different issues.

Source: Clarkeburn, H.M., Downie, J. R., Gray, C. & Matthew, R.G.S. (2003) Measuring ethical development in life sciences students: a study using Perry's developmental model, *Studies in Higher Education* 28(4): 443-456.

Participant Information Sheet: Ethical thinking in a disciplinary context Questionnaire

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me or the tutor who gave you this questionnaire if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?
This research will inform the development of how ethics is taught within the University by exploring student understandings of ethics at different stages in their degree programmes. The first stage of this research is to gather baseline information by use of a questionnaire. The purpose of this questionnaire is to explore your views of ethics and your own ethical development.

Why have I been chosen?
All the students on 5 different programmes are being invited to answer this questionnaire. These are: Single and Combined Honours English; Single and Combined Honours Animal Behaviour; and Single Honours Animal Behaviour and Welfare. .

Do I have to take part?
Completion of the questionnaire is entirely voluntary. Your decision to participate or not will not provide any advantage or disadvantage to you. We would, however, greatly appreciate you taking the time to complete the questionnaire.

What will happen to me if I agree to take part?
This is a paper-based questionnaire which students in all year groups will be asked to complete at the beginning of the year in class (or in their own-time if they are unable to attend the class and wish to participate). It is expected that the questionnaire should take no longer than 15 minutes to complete. The questionnaire requires you to consider ethical choices or decisions you have made in the past and your reasoning behind your decisions. Your completion of the questionnaire will be taken as your consent to participate in the research.

Why do you ask me what programme I am studying?
We are trying to understand the influence of different programmes upon ethical understanding and ethical development. As such it is important to know which programme you are studying. However, if you do not wish to identify your programme, you do not have to.

Who is organising and funding the research?
This research is part of a Masters Dissertation within the [redacted]'s Learning and Teaching Institute.

What will happen to the results of the research study?
The results will be analysed by the researcher detailed below. When any results and findings of this research project are presented or reported to others inside or outside of the University, your anonymity is guaranteed. Reference to specific people, who you may mention, will also be removed from any quotations that are used.

Will my taking part in the study be kept confidential?
Yes. To ensure this please do not write your name on the questionnaire.

What if something goes wrong?
We recognise that sometimes recalling ethical choices and decisions may cause distress. If this is the case, and you wish to talk about this to anyone, please contact Student Counselling (Tel: 01244 511550 or E-mail: student.counselling@[redacted].ac.uk). If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this research, please contact Professor Jethro Newton, Dean of Academic Quality and Enhancement, [redacted], Email: j.newton@[redacted].ac.uk, Tel: 01244 511938.

Who may I contact for further information?
Dr. Ruth Healey
r.healey@chester.ac.uk
01244 513176

Thank you for your interest in this research.

Appendix 2

Participant Information Sheet:
Ethical thinking in a disciplinary context Interviews with Tutors

You are being invited to take part in a research study. Before you decide to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?
This research will inform the development of how ethics is taught within the University by exploring student understandings of ethics at different stages in their degree programmes.

Why have I been chosen?
You have been selected because you are a programme leader or tutor on one of the case study programmes.

Do I have to take part?
Participation in this interview is entirely voluntary. Your decision to participate or not will not provide any advantage or disadvantage to you. I would, however, greatly appreciate you taking the time to participate in the interview.

What will happen to me if I agree to take part?
The interview will involve reflecting upon how ethics is taught in your programme. You will be asked about your perceptions of ethics, including its relative importance, and how you think it would be best to teach ethics to students at different stages in their development. You will be interviewed by Ruth Healey. It is expected that the interview should take no longer than an hour and will be recorded using a digital recorder. You will be asked to sign a consent form.

Who is organising and funding the research?
This research is part of a Masters Dissertation within the [redacted]'s Learning and Teaching Institute.

What will happen to the results of the research study?
The results will be analysed by the researcher, Ruth Healey. When any results and findings of this research project are presented or reported to others inside or outside of the University, your anonymity is guaranteed. Reference to specific people, who you may mention, will also be removed from any quotations that are used.

What if something goes wrong?
We do not expect anything to go wrong but if you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this research, please contact Professor Jethro Newton, Dean of Academic Quality and Enhancement, [redacted], Email: j.newton@[redacted]ac.uk, Tel: 01244 511938.

Who may I contact for further information?
Dr. Ruth Healey
r.healey@chester.ac.uk
01244 513176

Thank you for your interest in this research.

Appendix 3

Consent form to participate in interview

Title of Project:
Ethical Thinking in a Disciplinary Context

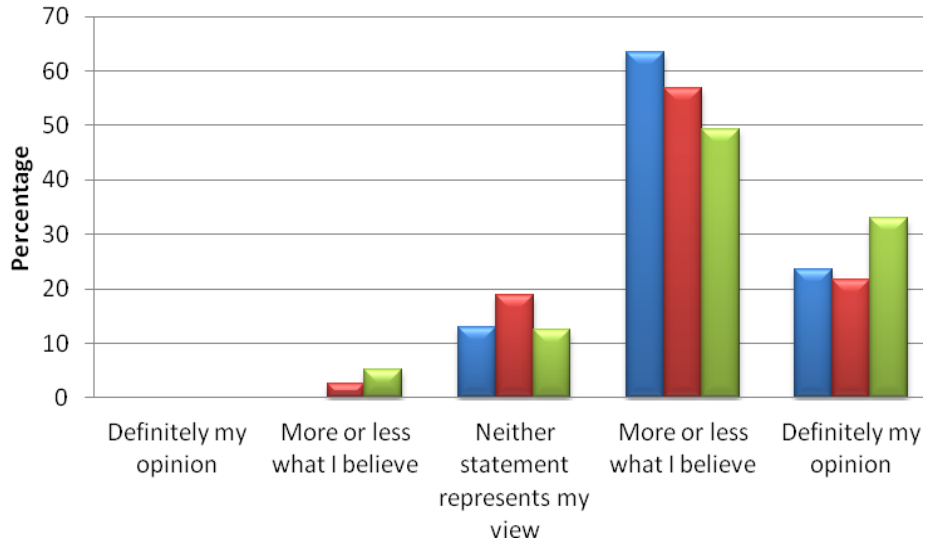
Names of Researchers:
Dr Ruth Healey

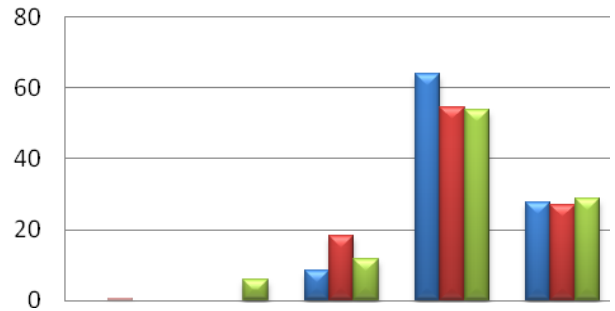
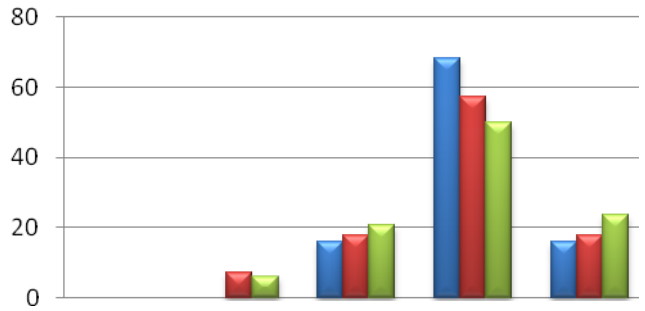
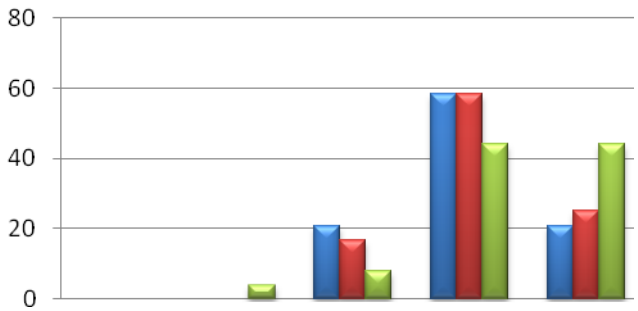
PLEASE INITIAL BOX

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason or legal rights being affected. ☐
3. I am willing for the interview to be recorded. ☐
4. I agree to take part in the above study. ☐

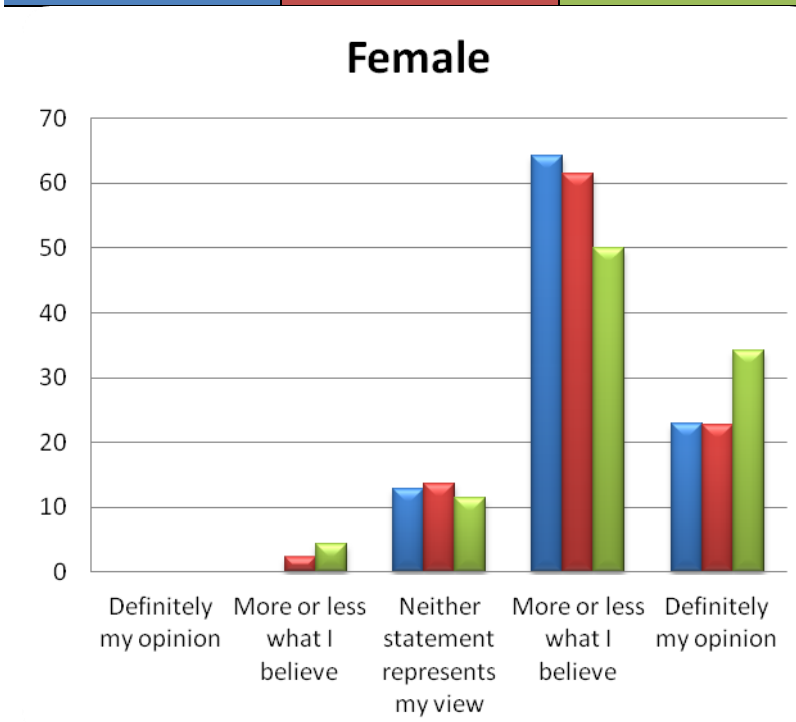
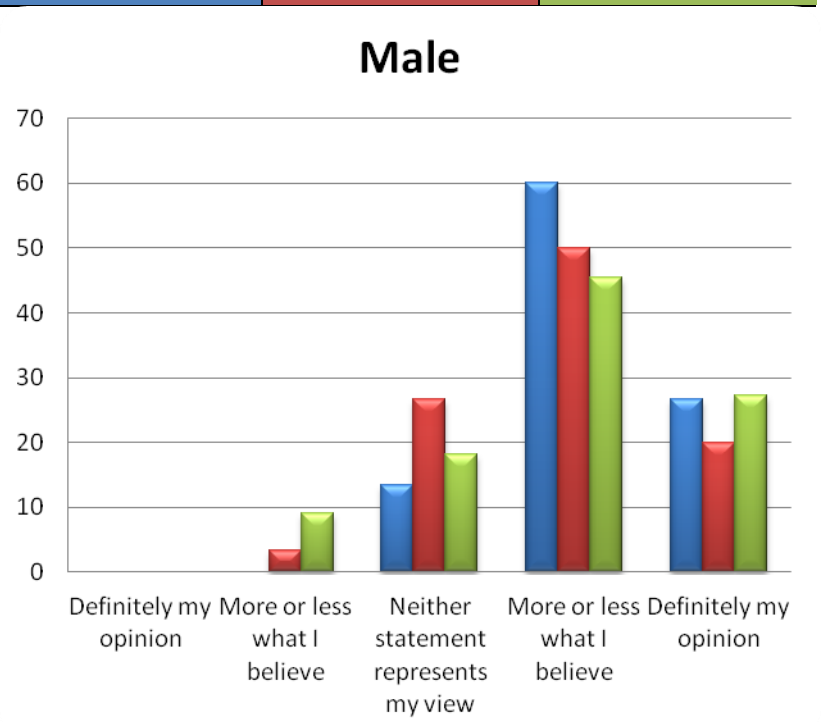
_____	_____/_____/_____	_____
Name of Participant	Date	Signature
_____	_____/_____/_____	_____
Researcher	Date	Signature

Appendix 4

Statement 1	Element I: Source and type of moral answers	Statement 2
Personal moral values are the same forever. A good moral answer is short and simple, because you know the right answer. I believe we can always make a judgement whether actions are right or wrong and these rules do not change.	**Mean for each subject** English 17.8 | Geography 17.1 | Animal Behaviour 17.7  No significant difference by subject p < 0.154, Chi-Square 6.676, df4	Personal moral values need to be reconsidered from time to time. You cannot have a good moral answer without arguments to support it, because moral answers are never straight forward. When we make moral decisions, the best we can do is to decide what is right as far as we can tell in different situations.

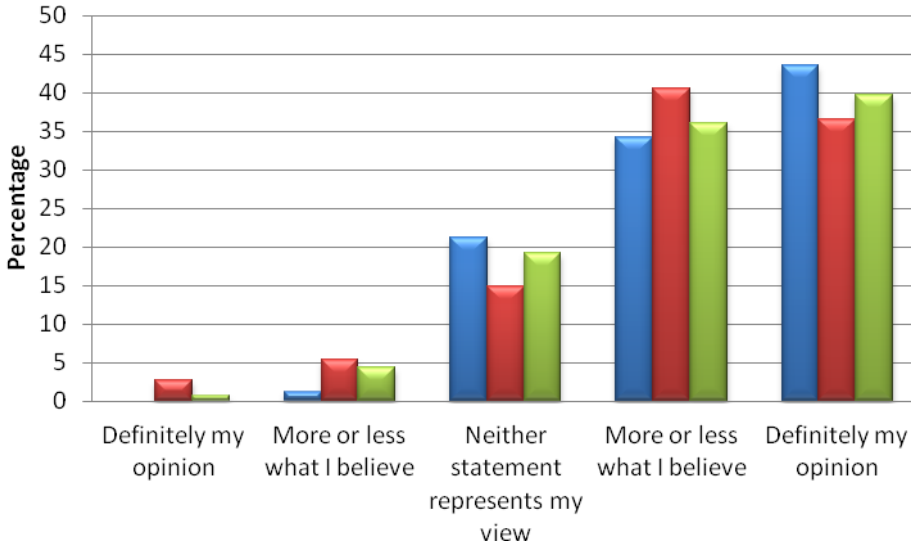
Year 1	Year 2	Year 3
18.0 | 17.7 | 17.4	17.2 | 16.4 | 16	18.1 | 17.4 | 19.1
 	 	

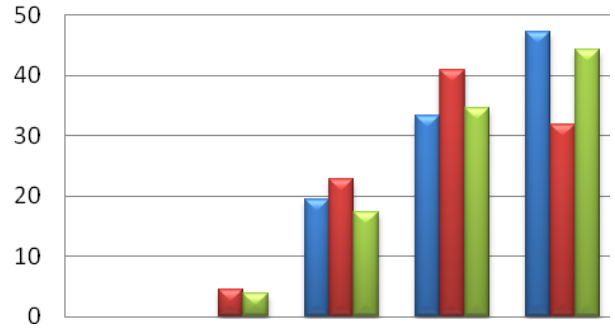
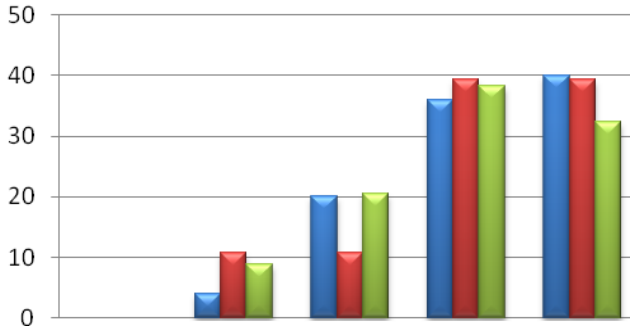
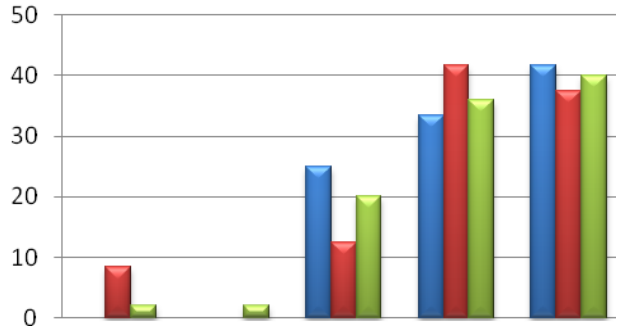
No significant difference by year p < 0.185, Chi-Square 6.199, df4

Statement 1	Element I: Source and type of moral answers						Statement 2
	17.8	17.4	17.9	17.8	16.6	16.4	
Personal moral values are the same forever. A good moral answer is short and simple, because you know the right answer. I believe we can always make a judgement whether actions are right or wrong and these rules do not change.							Personal moral values need to be reconsidered from time to time. You cannot have a good moral answer without arguments to support it, because moral answers are never straight forward. When we make moral decisions, the best we can do is to decide what is right as far as we can tell in different situations.

No significant difference by gender $p < 0.261$, Chi-Square 4.001, df3

Appendix 5

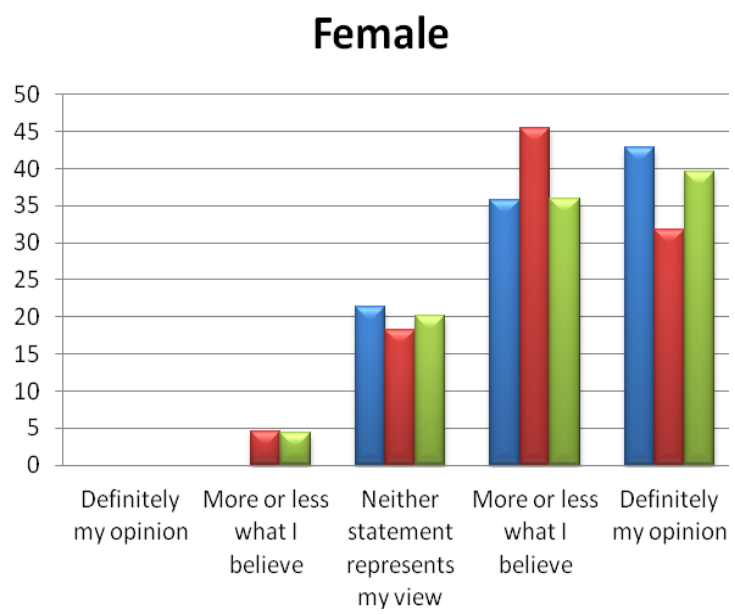
Statement 1	Element II: Role of authority	Statement 2
	Mean for each subject	
	English 18.3 | Geography 17.2 | Animal Behaviour 17.6	
I don't think teachers should assess my moral arguments if they do not know the right answers yet.		It is important that teachers assessing moral arguments look for logical structure and good reasoning rather than a particular answer.
	No significant difference by subject p < 0.431, Chi-Square 5.931, df6	

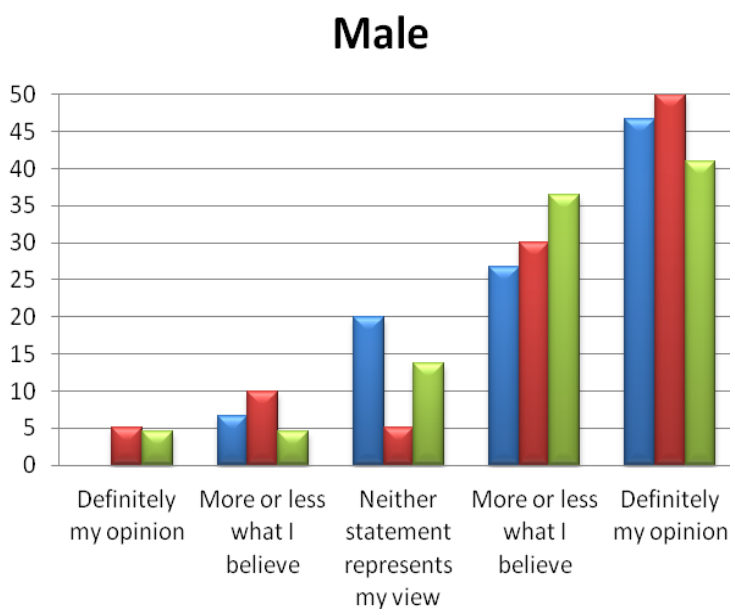
Year 1	Year 2	Year 3
18.9 | 16.7 | 18.3	17.7 | 17.5 | 16.4	18.0 | 17.3 | 17.7
		

No significant difference by year p < 0.720, Chi-Square 3.678, df6

Statement 1	Element II: Role of authority						Statement 2
	18.4	17.0	17.6	18.0	17.4	17.5	

I don't think teachers should assess my moral arguments if they do not know the right answers yet.





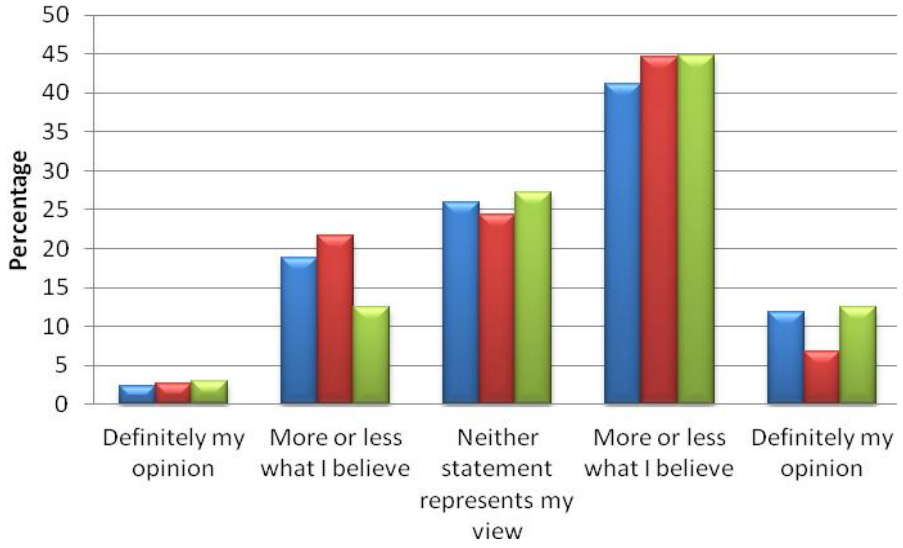
It is important that teachers assessing moral arguments look for logical structure and good reasoning rather than a particular answer.

Significant difference by gender $p < 0.051$, Chi-Square 7.773, df3

Appendix 6

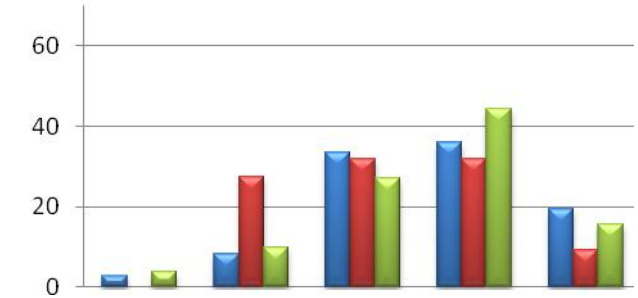
Statement 1	Element III: Nature of multiplicity	Statement 2
Moral questions have absolutely right answers.	Mean for each subject	There are very few absolutely right answers in the world and answers to moral questions are not one of them.

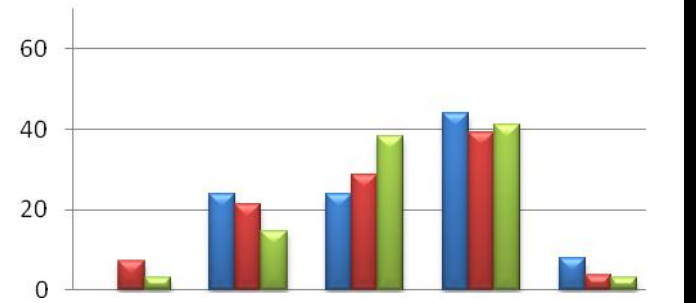
English	Geography	Animal Behaviour
12.6	11.9	13.3

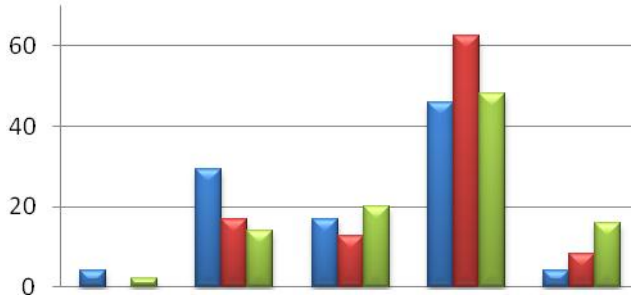


No significant difference by subject p < 0.789, Chi-Square 4.703, df8

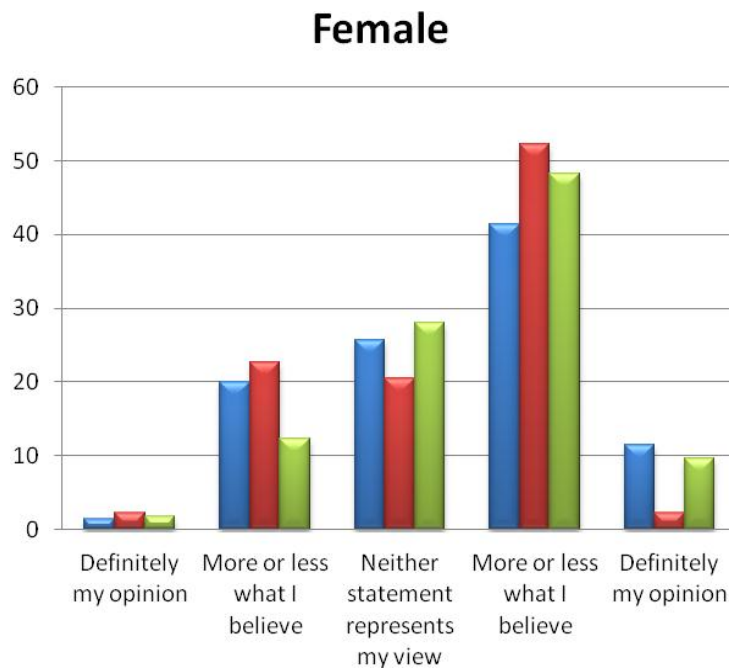
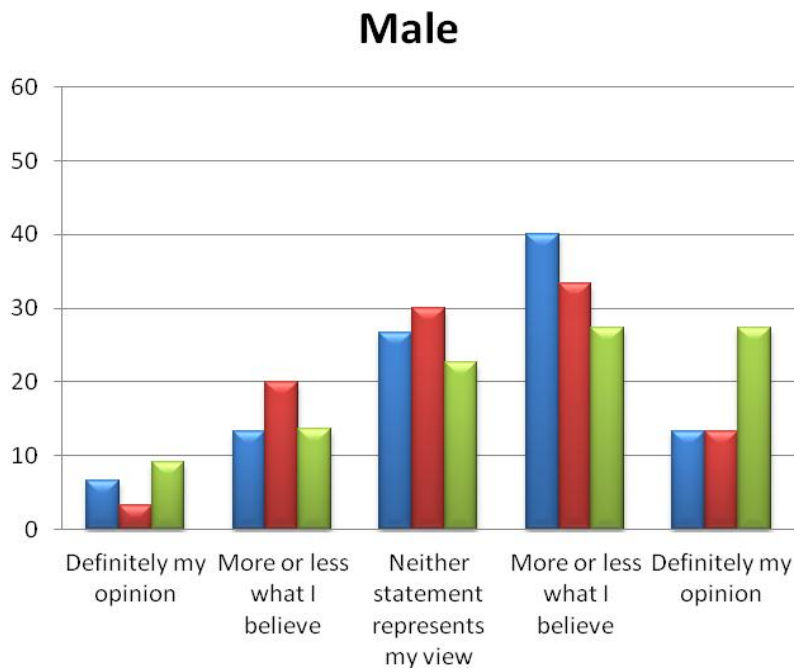
Year 1			Year 2			Year 3		
14	11.3	13.8	12.2	10.7	11.4	11.1	13.9	14.1





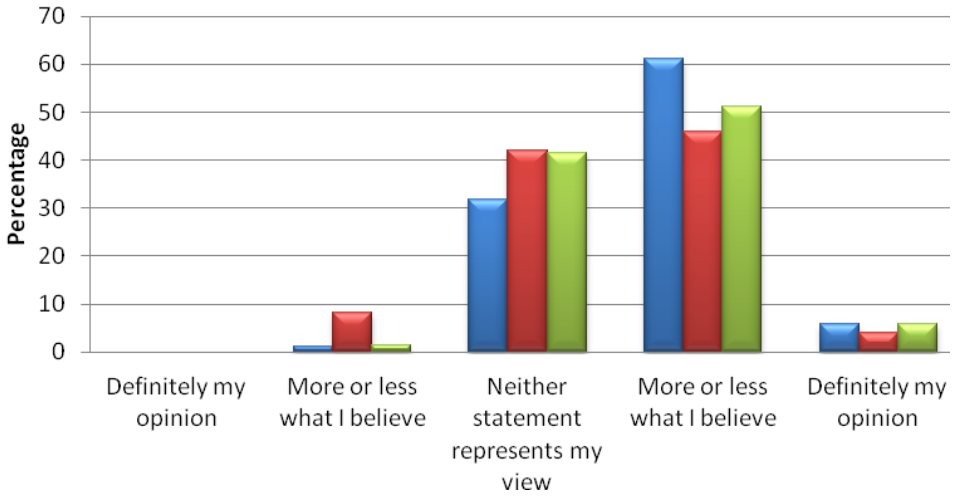


No significant difference by year p < 0.098, Chi-Square 13.437, df8

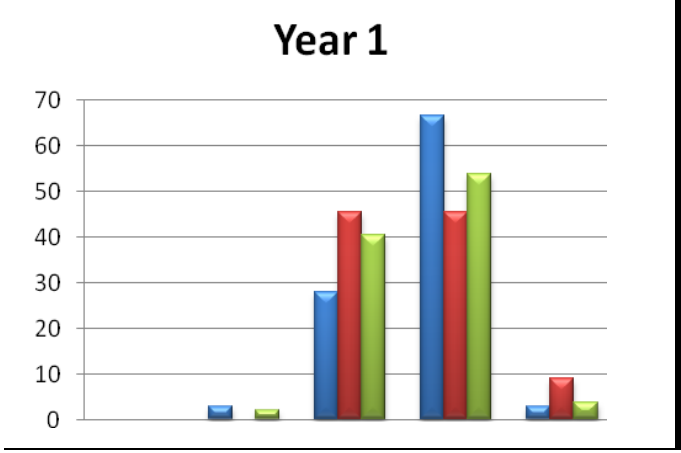
Statement 1	Element III: Nature of multiplicity						Statement 2
	12.6	11.7	13.2	12.7	12.2	13.9	
Moral questions have absolutely right answers.							There are very few absolutely right answers in the world and answers to moral questions are not one of them.

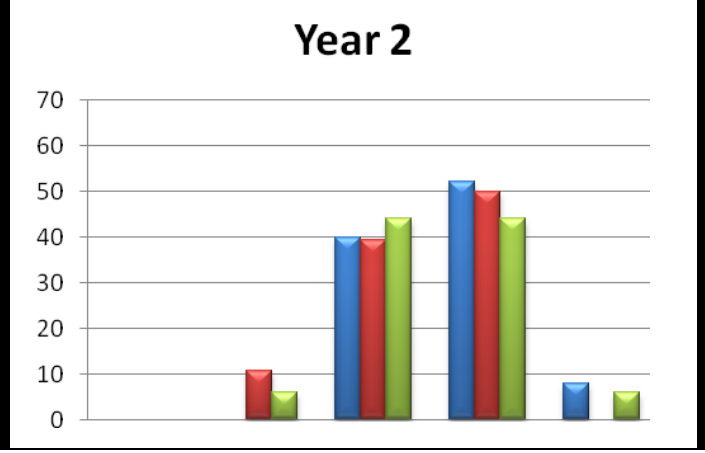
Significant difference by gender $p < 0.045$, Chi-Square 9.754, df4

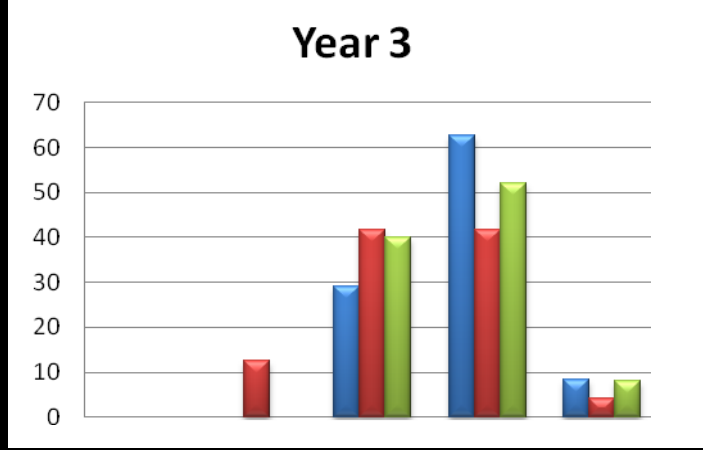
Appendix 7

Statement 1	Element IV: Personal responsibility and relationship with multiplicity	Statement 2
People cannot choose their values because values are either right or wrong. I do not doubt that my values are the right values to have. It is not my place to make moral choices, because right answers have been found already by others.	**Mean for each subject** English 14.8 | Geography 13.5 | Animal Behaviour 14.1  No significant difference by subject p < 0.086, Chi-Square 4.913, df2	I am committed to a set of values I have chosen for myself. I need to commit myself to a set of values even when I am uncertain whether they will always be the right values to have. When I have a moral problem I try to think the answer through myself.

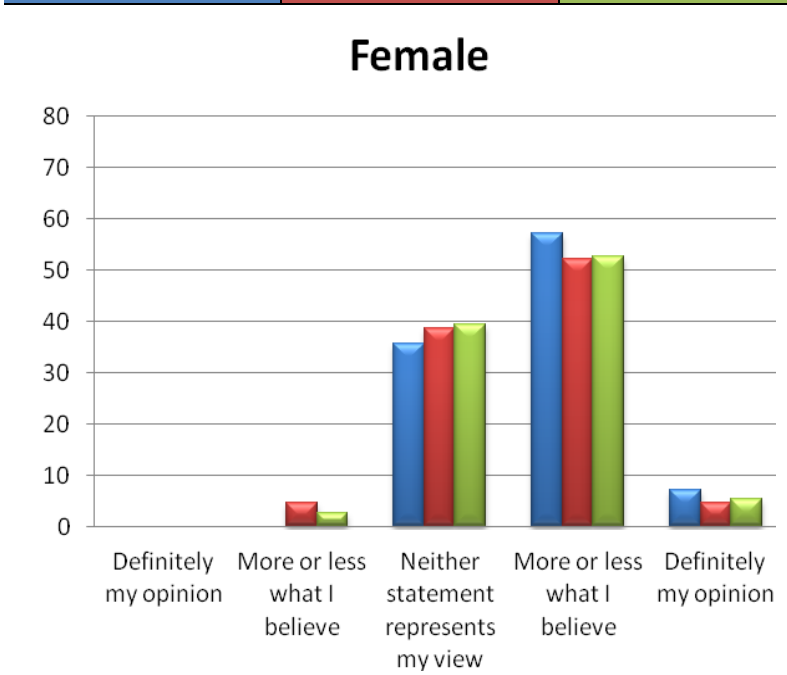
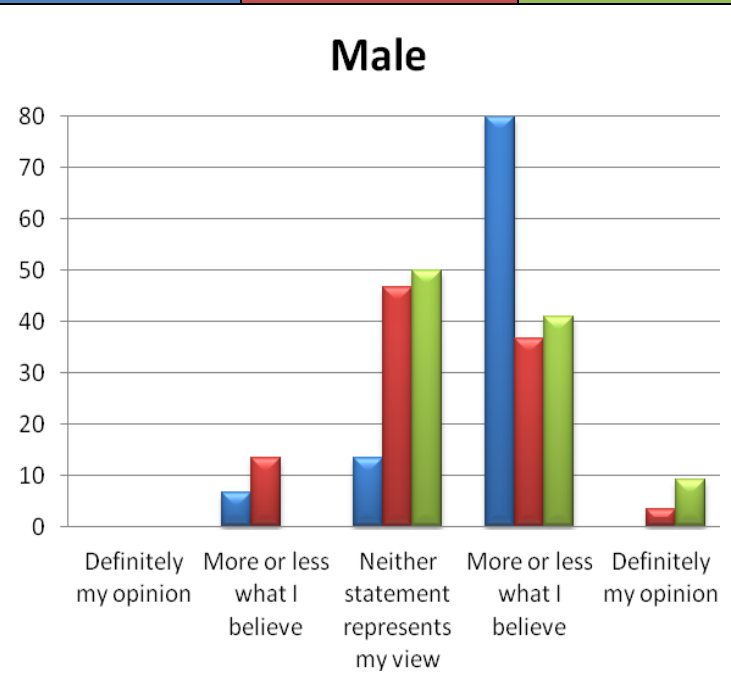
14.2	14.5	14.1	14.9	13.4	12.6	15.5	12.7	15.2





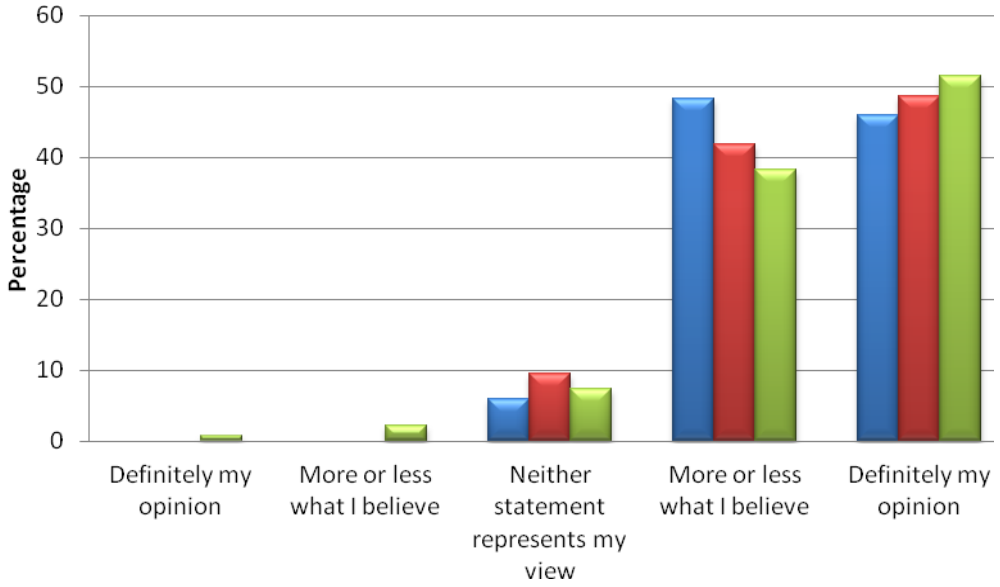


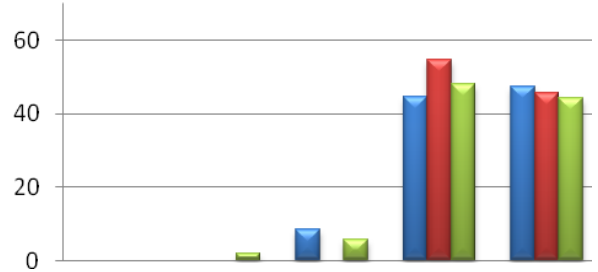
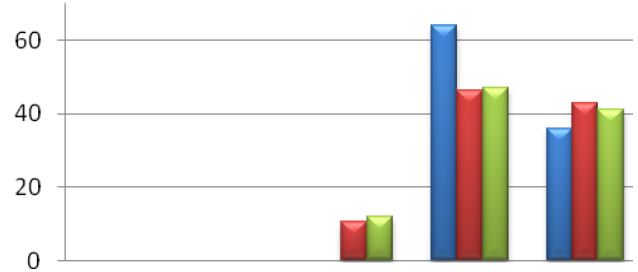
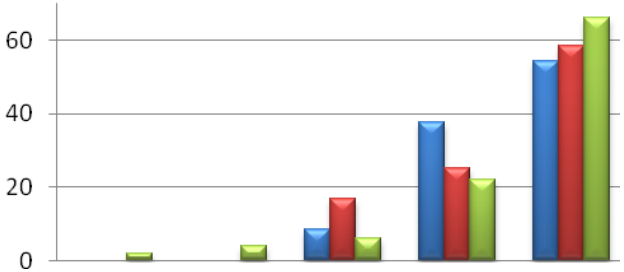
No significant difference by year p < 0.697, Chi-Square 2.210, df4

Statement 1	Element IV: Personal responsibility and relationship with multiplicity						Statement 2
	14.8	13.7	14.1	14.4	13.1	14.3	
People cannot choose their values because values are either right or wrong. I do not doubt that my values are the right values to have. It is not my place to make moral choices, because right answers have been found already by others.							I am committed to a set of values I have chosen for myself. I need to commit myself to a set of values even when I am uncertain whether they will always be the right values to have. When I have a moral problem I try to think the answer through myself.

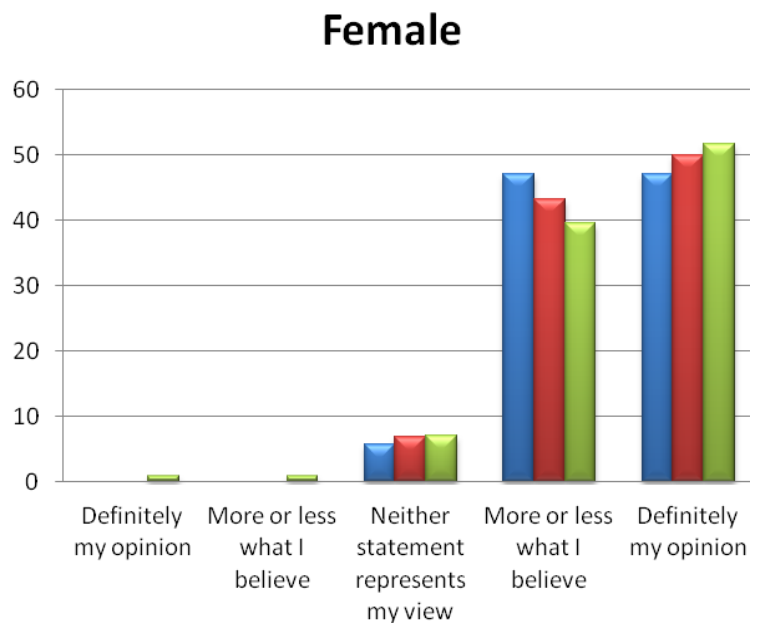
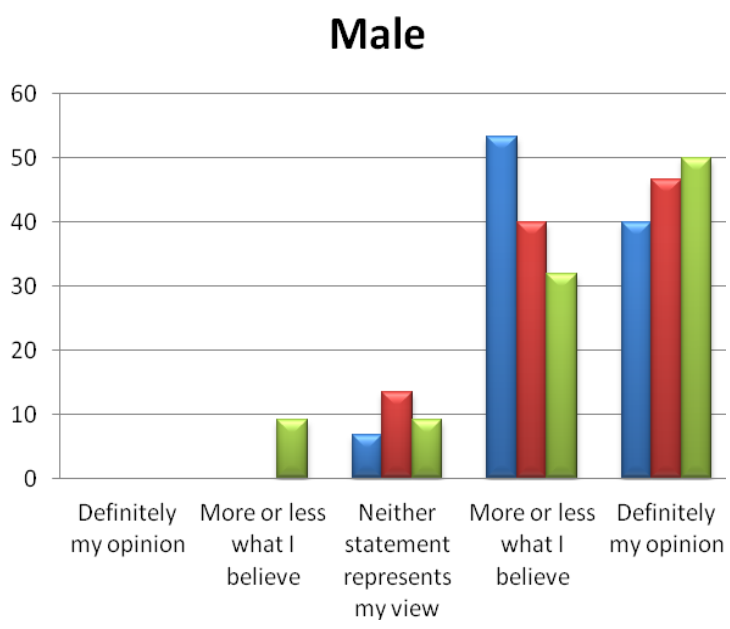
No significant difference by gender $p < 0.550$, Chi-Square 1.197, df2

Appendix 8

Statement 1	Element V: Purpose of moral discussions	Statement 2
	Mean for each subject	
	English 19.0 | Geography 17.9 | Animal Behaviour 18.0	
I don't think discussing moral problems is beneficial for me unless a right answer can be found at the end. I don't enjoy discussing moral problems unless the teacher can give the right answer in the end.		Discussing values with other people gives me a beneficial opportunity to reflect on my values, even when there is no agreement in the end. I enjoy discussing my values in the class even when we cannot agree on one right answer in the end.
	No significant difference by subject p < 0.595, Chi-Square 2.784, df4	

Year 1			Year 2			Year 3		
18.8	18.3	17.8	18.8	17.8	17.1	19.6	17.6	18.9
								

Significant difference by year p < 0.004, Chi-Square 15.274, df4

Statement 1	Element V: Purpose of moral discussions						Statement 2
	19.3	18.2	18.2	17.5	17.4	17.1	
I don't think discussing moral problems is beneficial for me unless a right answer can be found at the end. I don't enjoy discussing moral problems unless the teacher can give the right answer in the end.							Discussing values with other people gives me a beneficial opportunity to reflect on my values, even when there is no agreement in the end. I enjoy discussing my values in the class even when we cannot agree on one right answer in the end.

No significant difference by gender $p < 0.315$, Chi-Square 2.308, df2